APPENDIX I

Traffic Impact Assessment

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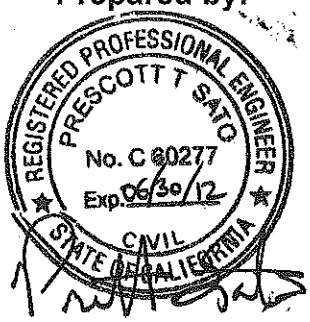

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BRASADA RESIDENTIAL DEVELOPMENT
TRAFFIC IMPACT ANALYSIS
CITY OF SAN DIMAS, CALIFORNIA

July 29, 2010

JN:07358-02

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BRASADA RESIDENTIAL DEVELOPMENT
TRAFFIC IMPACT ANALYSIS
CITY OF SAN DIMAS, CALIFORNIA

1.0 INTRODUCTION AND SUMMARY

A. Purpose of Report and Study Objectives

This report addresses the potential traffic-related impacts associated with the proposed Brasada Residential Development. The project is anticipated to be developed with 61 single family residential units. The site is located north of Foothill Boulevard and east of Cataract Avenue in the City of San Dimas.

Study objectives include (1) documentation of existing traffic conditions in the vicinity of the project; (2) evaluation of Existing + Ambient Growth + Project conditions; (3) evaluation of Year 2017 without the project traffic conditions; (4) evaluation of Year 2017 with project traffic conditions; and (4) determination of on-site and off-site improvements and system management actions needed to achieve City of San Dimas level of service requirements.

B. Executive Summary

1. Site Location and Study Area

The project site is located north of Foothill Blvd. and east of Cataract Avenue within the City of San Dimas in the County of Los Angeles. Exhibit 1-A illustrates the traffic analysis study area.

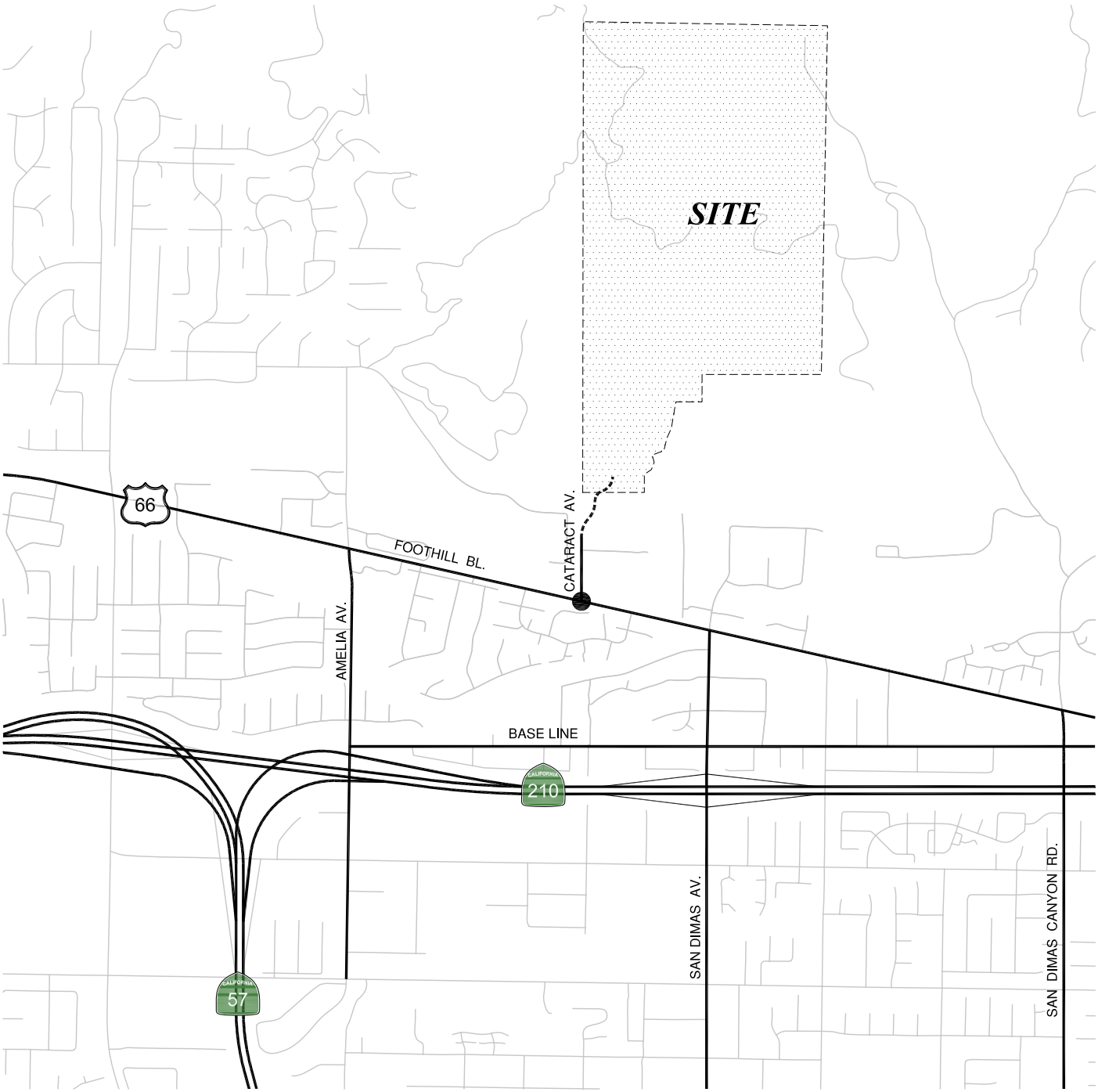
The study area includes the following intersection:

Cataract Avenue (NS) at:

- Foothill Blvd. (EW)

EXHIBIT 1-A

LOCATION MAP



LEGEND:

● = INTERSECTION ANALYSIS LOCATION

N

2. Development Description

The project land use consists of 61 single family residential units. It is anticipated that the projected project will be fully constructed by the year 2017.

3. Cumulative Growth Conditions

Cumulative development and area-wide (ambient) growth calculations were added to existing volumes in the vicinity of the site for 2017 without and with project traffic conditions. The cumulative development projects to be included as a part of the analysis were provided by the Planning Department at the City of San Dimas. In addition to the cumulative projects, an ambient growth of two (2) percent per year for a total of fourteen (14) percent has been incorporated into the analysis.

4. Principal Findings

a. Required Level of Service (LOS): The City of San Dimas has established that peak hour intersection operation of LOS "D" or better is generally acceptable. Therefore, any intersection operating at LOS "E" and "F" will be considered deficient.

b. Existing Levels of Service: For existing traffic conditions, the study area intersection is currently operating at acceptable levels of service during the peak hours.

c. Existing Plus Ambient Growth Plus Project: For existing conditions with the additional traffic due to the project, the study area intersection is anticipated to continue to operate at an acceptable service level during the peak hours.

d. Year 2017 Level of Service Without the Proposed Development: For Year 2017 without project traffic conditions, the study area intersection is forecast to operate at acceptable levels of service during the peak hours.

e. Year 2017 Level of Service With the Proposed Development: For 2017 with project traffic conditions, the study area intersection is anticipated to continue to operate at acceptable levels of service during the peak hours.

5. Conclusions

The proposed development is projected to generate approximately 584 trip-ends per day with 46 vehicles per hour during the AM peak hour and 62 vehicles per hour during the PM peak hour in 2017.

The proposed project will have access to Foothill Boulevard via Cataract Avenue/Brasada Lane. The intersection of Foothill Boulevard/Cataract Avenue is currently stop controlled for southbound traffic.

The level of service analysis indicates that the study area intersection of Cataract Avenue/Foothill Boulevard will operate at acceptable conditions with the additional traffic due to the proposed project.

6. Recommendations

Since the study area intersection is anticipated to operate at acceptable conditions, no improvements to this location have been recommended. However, the following on-site recommendations are provided below:

- Sight distance at the internal project intersections should be reviewed with respect to standard Caltrans/City of San Dimas sight distance standards at the time of preparation of final grading, landscape and street improvement plans.

- Traffic signing and striping should be implemented in conjunction with detailed construction plans for the project site.

2.0 PROPOSED DEVELOPMENT

A. Location

The proposed project site is located north of Foothill Blvd. and east of Cataract Avenue within the City of San Dimas.

B. Land Use and Intensity

The proposed project is to be developed with 61 single family residential units.

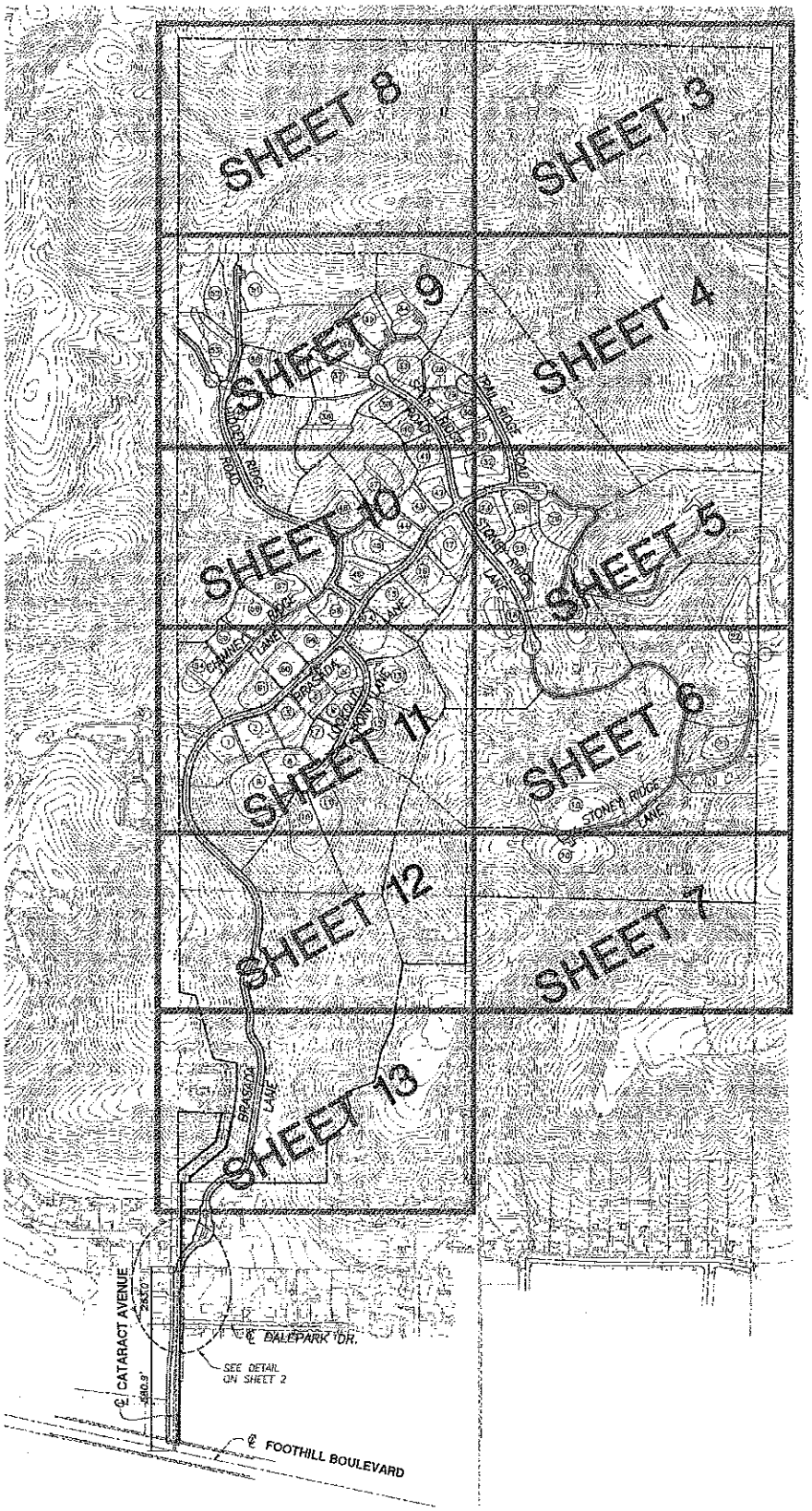
C. Site Plan

Exhibit 2-A illustrates the project site plan.

D. Phasing and Timing

The proposed Brasada Residential Development is planned to be built and occupied by 2017. An ambient, background traffic growth of two (2) percent per year has been assumed. The 2017 without and with project traffic conditions analyses are based upon seven years of background traffic growth, for a total of fourteen (14) percent.

SITE PLAN


SHEET 8
SHEET 3
SHEET 9
SHEET 4
SHEET 10
SHEET 5
SHEET 11
SHEET 6
SHEET 12
SHEET 7
SHEET 13
STONEY RIDGE ROAD
RAM RIDGE ROAD
STONEY RIDGE LANE
BRASADA LANE
STONY LANE
CATARACT AVENUE
BALEPARK DR.
SEE DETAIL ON SHEET 2
FOOTHILL BOULEVARD

N

3.0 AREA CONDITIONS

A. Study Area

1. Area of Significant Traffic Impact

The study area includes the following existing intersection:

Cataract Avenue (NS) at:

- Foothill Blvd. (EW)

B. Study Area Land Use

1. Existing Land Uses

The site is currently vacant. Adjacent uses include the following:

North	–	Vacant
South	–	Residential
East	–	Vacant
West	–	Vacant

2. Approved Future Development

Cumulative development and area-wide (ambient) growth calculations were added to existing volumes in the vicinity of the site for 2017 without and with project traffic conditions. The cumulative development projects to be included as a part of the analysis were provided by the Planning Department at the City of San Dimas. In addition to the traffic due to the cumulative developments, the analysis assumed an ambient growth of two (2) percent per year for a total of fourteen (14) percent.

C. Site Accessibility

1. Area Roadway System

Exhibit 3-A identifies the existing roadway conditions for study area roadways. The number of through traffic lanes for existing roadways and the existing intersection controls are identified.

Cataract Avenue is currently a two lane roadway in the vicinity of the site. It extends from Foothill Blvd. to approximately 800 feet to the north.

Foothill Boulevard is a four lane roadway with a center median. The current speed limit in the area is 40 miles per hour. On-street parking is allowed.

2. Traffic Operations Analysis Methodology

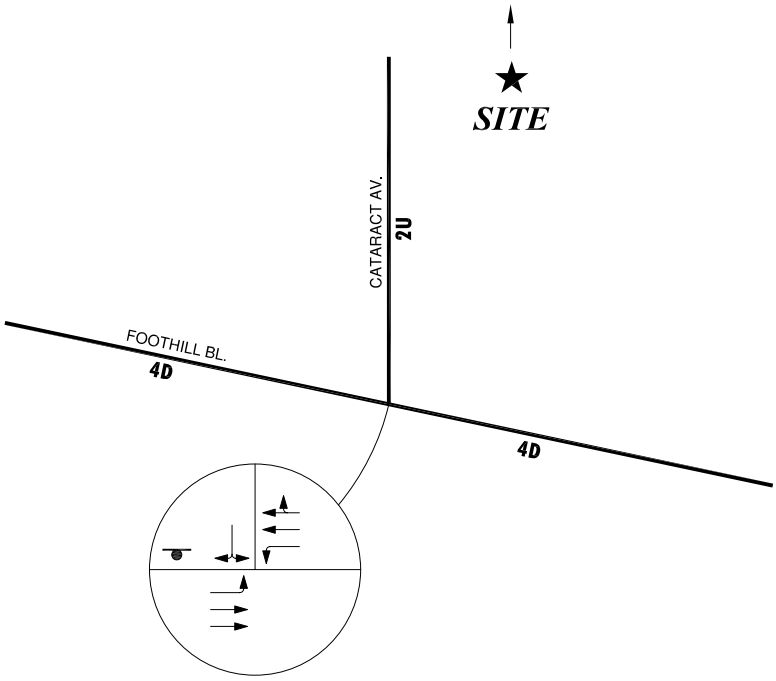
a. HCM 2000 Methodology

The HCM defines level of service as a qualitative measure which describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

The study area intersections which are stop sign controlled with stop control on the minor street have only been analyzed using the unsignalized intersection methodology of the HCM. For these intersections, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow of the main street. Using data collected describing the intersection configuration and traffic volumes at the study area locations, the level of service has

EXHIBIT 3-A

EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS



LEGEND:

- = STOP SIGN
- 4 = NUMBER OF LANES
- D = DIVIDED
- U = UNDIVIDED

N

been calculated. The level of service criteria for this type of intersection analysis is based on total delay per vehicle for the worst minor street movement(s).

The levels of service are defined for unsignalized intersections as follows:

LEVEL OF SERVICE	AVERAGE TOTAL DELAY (SECONDS)
A	0.00 - 10.00
B	10.01 - 15.00
C	15.01 - 25.00
D	25.01 - 35.00
E	35.01 - 50.00
F	> 50.00

It is the City of San Dimas' policy that LOS "A" through "D" represents acceptable operations, while LOS "E" and "F" are considered deficient.

Weekday peak hour analysis periods are defined as follows: AM peak hour (7:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM). The highest one-hour period in both the AM and PM peak periods, as determined by four consecutive 15-minute count periods are used in the HCM calculations. Both AM and PM peak hours are studied for the purposes of this analysis.

3. Traffic Volumes

Existing average daily traffic (ADT) volumes on arterial highways throughout the study area are shown on Exhibit 3-B. Existing ADT volumes are based upon traffic data collected for Urban Crossroads, Inc.

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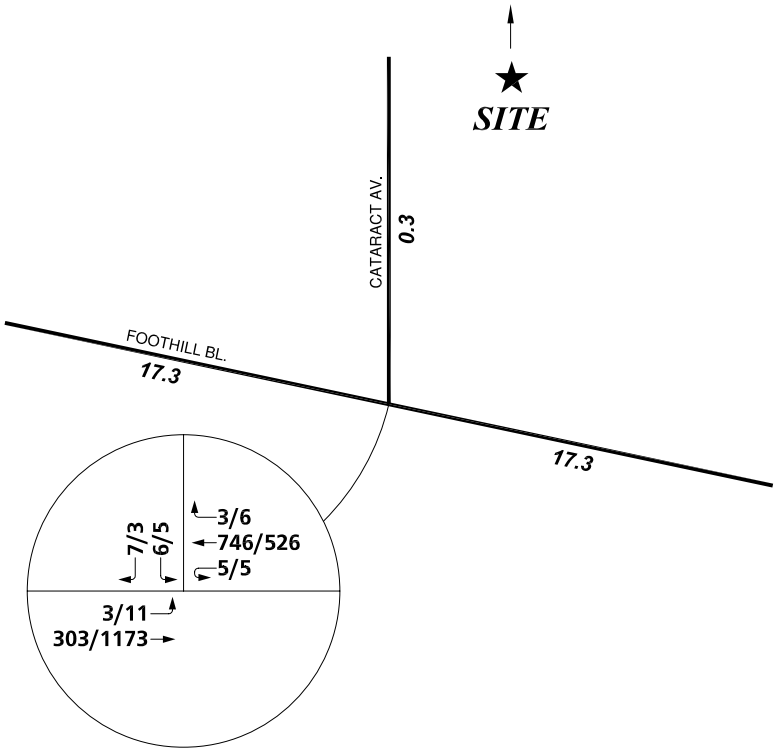
EXHIBIT 3-B

EXISTING TRAFFIC COUNTS



LEGEND:

3/11 = AM/PM PEAK HOUR VOLUMES

10.0 = VEHICLES PER DAY (1000'S)

N

Existing AM and PM peak hour traffic operations have been evaluated for the study area intersection. The results of this analysis are summarized in Table 3-1, along with the existing intersection lane configuration and traffic control devices. Existing intersection level of service calculations are based upon manual AM and PM peak hour turning movement counts made for Urban Crossroads, Inc. in June 2010 (see Exhibit 3-B). Traffic count worksheets are included in Appendix "A".

For existing traffic conditions, the study area intersection operates at acceptable levels of service during the peak hours. The HCM calculation worksheets for existing traffic conditions are provided in Appendix "B".

4. Transit Service

The study area is currently served by Foothill Transit. Foothill Transit Lines 187 and 284 operate along Foothill Blvd. near the vicinity of the project site.

TABLE 3-1

INTERSECTION ANALYSIS FOR EXISTING CONDITIONS

INTERSECTION	TRAFFIC CONTROL [1]	INTERSECTION APPROACH LANES [2]												DELAY [3] (SECS.)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Cataract Ave. (NS) at: • Foothill Blvd (EW)	CSS	0	0	0	0	1	0	1	2	0	1	2	0	14.5	18.9	B	C

[1] CSS = Cross Street Stop

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; 1! = Shared Left-Through-Right Lane; > = Right Turn Overlap Phase; >> Free Right Turn Lane;

[3] Delay and level of service calculated using the following analysis software: Traffix, Version 8.0 (2008).
Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

4.0 PROJECTED TRAFFIC

A. Site Traffic

1. Trip Generation

Trip generation represents the amount of traffic that is attracted and produced by a development. The traffic generation for the project is based upon the specific land use that has been planned for the development. The project site is proposed to be developed with 61 single family residential units. Trip generation rates for this project are shown in Table 4-1. The trip generation rates are based upon data collected by the Institute of Transportation Engineers (ITE).

Daily, AM and PM peak hour trip generation for the proposed project are shown in Table 4-2. For 2017 conditions, the proposed development is projected to generate approximately 584 trip-ends per day with 46 vehicles per hour during the AM peak hour and 62 vehicles per hour during the PM peak hour.

2. Trip Distribution

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of residential, employment and recreational opportunities and the proximity to the regional freeway system. The directional orientation of traffic was determined by evaluating existing and proposed land uses and highways within the community and existing traffic volumes.

TABLE 4-1

TRIP GENERATION RATES [1]

LAND USE	ITE CODE	QUANTITY	UNITS[2]	PEAK HOUR TRIP RATES						DAILY
				AM			PM			
				IN	OUT	TOTAL	IN	OUT	TOTAL	
Proposed Project										
Single Fam. Detached	210	61	DU	0.19	0.56	0.75	0.64	0.37	1.01	9.57
Other Developments										
Apartment	220	80	DU	0.1	0.41	0.51	0.4	0.22	0.62	6.65
Warehousing	150	24.122	TSF	0.24	0.06	0.3	0.08	0.24	0.32	3.56
General Office Building	710	2.848	TSF	3.36	0.46	3.82	4.89	23.9	28.79	30.24
Supermarket	850	10.55	TSF	2.19	1.4	3.59	5.36	5.14	10.5	102.24
Shopping Center	820	7.843	TSF	2.67	1.71	4.38	7.22	7.52	14.74	165.53
Discount Club	857	72	TSF	0.4	0.16	0.56	2.12	2.12	4.24	41.8
General Office Building	710	10	TSF	2.62	0.36	2.98	1.53	7.47	9	22.66
Day Care Center	565	12	TSF	6.5	5.76	12.26	5.86	6.6	12.46	79.26
Automobile Care Center	942	9.5	TSF	1.91	1.03	2.94	1.69	1.69	3.38	33.8
Residential Condo/Townhouse	230	7	DU	0.07	0.37	0.44	0.35	0.17	0.52	5.81
High Turnover (Sit-Down) Restaurant	932	6.5	TSF	5.99	5.53	11.52	6.58	4.57	11.15	127.15
Government Office	730	14.607	TSF	4.94	0.94	5.88	0.38	0.83	1.21	68.93

[1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 8th Edition and the San Diego Traffic Generators (SANDAG)

[2] TSF = Thousand Square Feet; DU = Dwelling Units

TABLE 4-2

PROJECT TRIP GENERATION SUMMARY

LAND USE	QUANTITY	UNITS[1]	PEAK HOUR						DAILY
			AM			PM			
			IN	OUT	TOTAL	IN	OUT	TOTAL	
Single Fam. Detached	61	DU	12	34	46	39	23	62	584

[1] DU = Dwelling Units

The trip distribution for this study has been based upon 2017 conditions and highway facilities that are either in place or will be contemplated in the future. The trip distribution pattern for the project is graphically depicted on Exhibit 4-A.

3. Modal Split

The trip generation rates used in this report have been obtained from the ITE Trip Generation Manual, 8th Edition and are generally consistent with/based on data collected in suburban areas with typical suburban transit service.

The traffic reducing potential of more extensive public transit has not been considered in this report. Essentially the traffic projections may be "conservative" in that more intensive public transit might be able to reduce the traffic volumes.

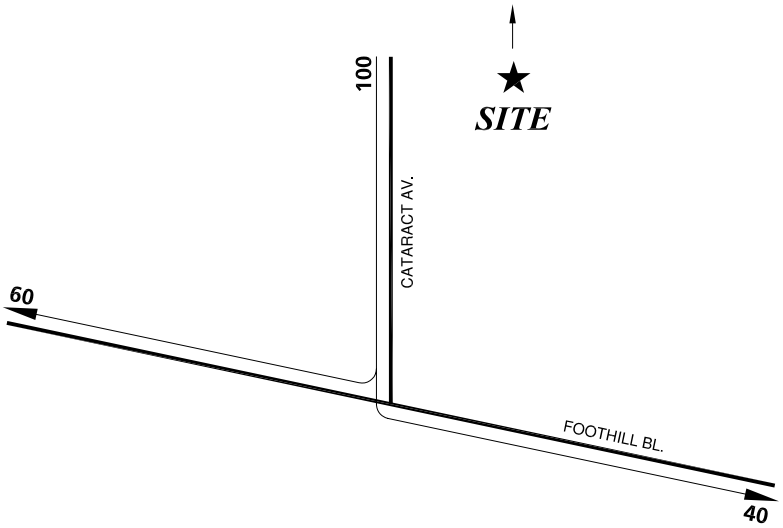
4. Trip Assignment

The assignment of traffic from the site to the adjoining roadway system has been based upon the site's trip generation, trip distribution, proposed arterial highway and local street systems.

Based on the identified project traffic generation and distribution, 2017 project related ADT, AM, and PM peak hour volumes are shown on Exhibit 4-B.

EXHIBIT 4-A

PROJECT TRIP DISTRIBUTION



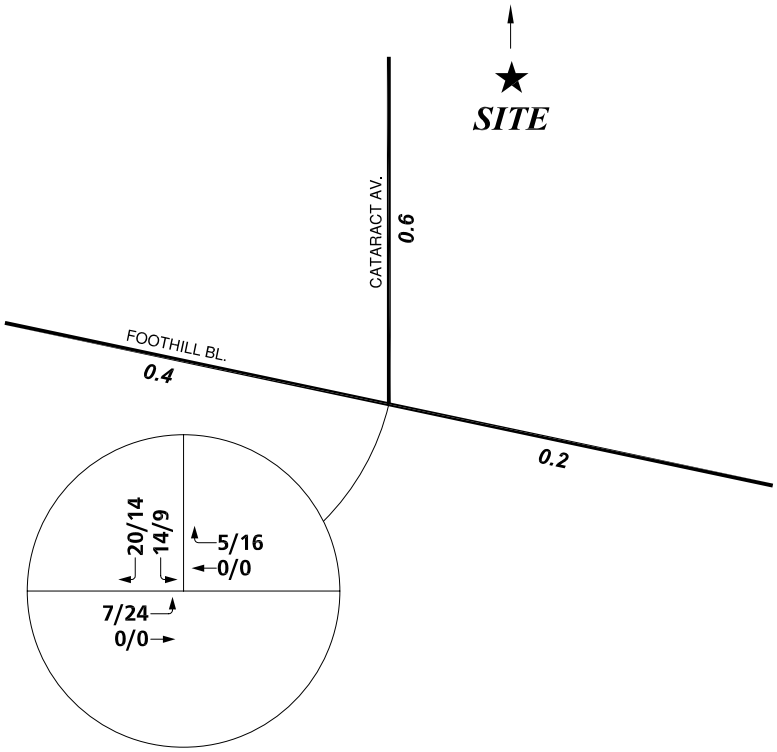
LEGEND:

10 = PERCENT TO/FROM PROJECT

N

EXHIBIT 4-B

PROJECT TRAFFIC VOLUMES



LEGEND:

5/16 = AM/PM PEAK HOUR VOLUMES

10.0 = VEHICLES PER DAY (1000'S)

N

B. Other Development Traffic

1. Method of Projection

Cumulative development and area-wide (ambient) growth calculations were added to existing volumes in the vicinity of the site for 2017 without and with project traffic conditions. The cumulative development projects to be included as a part of the analysis were provided by the Planning Department at the City of San Dimas and Glendora. It is important to note that some of the cumulative developments provided by the Cities were not anticipated to add traffic to the study intersection due to its proximity or the nominal amount of trip generated by the site (e.g. cell towers). Therefore, these projects were not included in the traffic analysis.

2. Non-Site Traffic for Study Area

Trip generation rates for the other development projects were previously shown in Table 4-1. Table 4-3 lists the proposed land uses for the cumulative development in the study area (see Exhibit 4-C) provided by the Planning Department at the City of San Dimas. Table 4-3 shows the daily and peak hour vehicle trips generated by the surrounding developments concurrently being processed in the study area. The cumulative developments are projected to generate approximately 22,204 trip-ends per day with 1,210 vehicles per hour during the AM peak hour and 2,424 vehicles per hour during the PM peak hour. The directional distribution and assignment of the other development traffic are included in Appendix "D".

TABLE 4-3

OTHER DEVELOPMENT LAND USE AND TRIP GENERATION

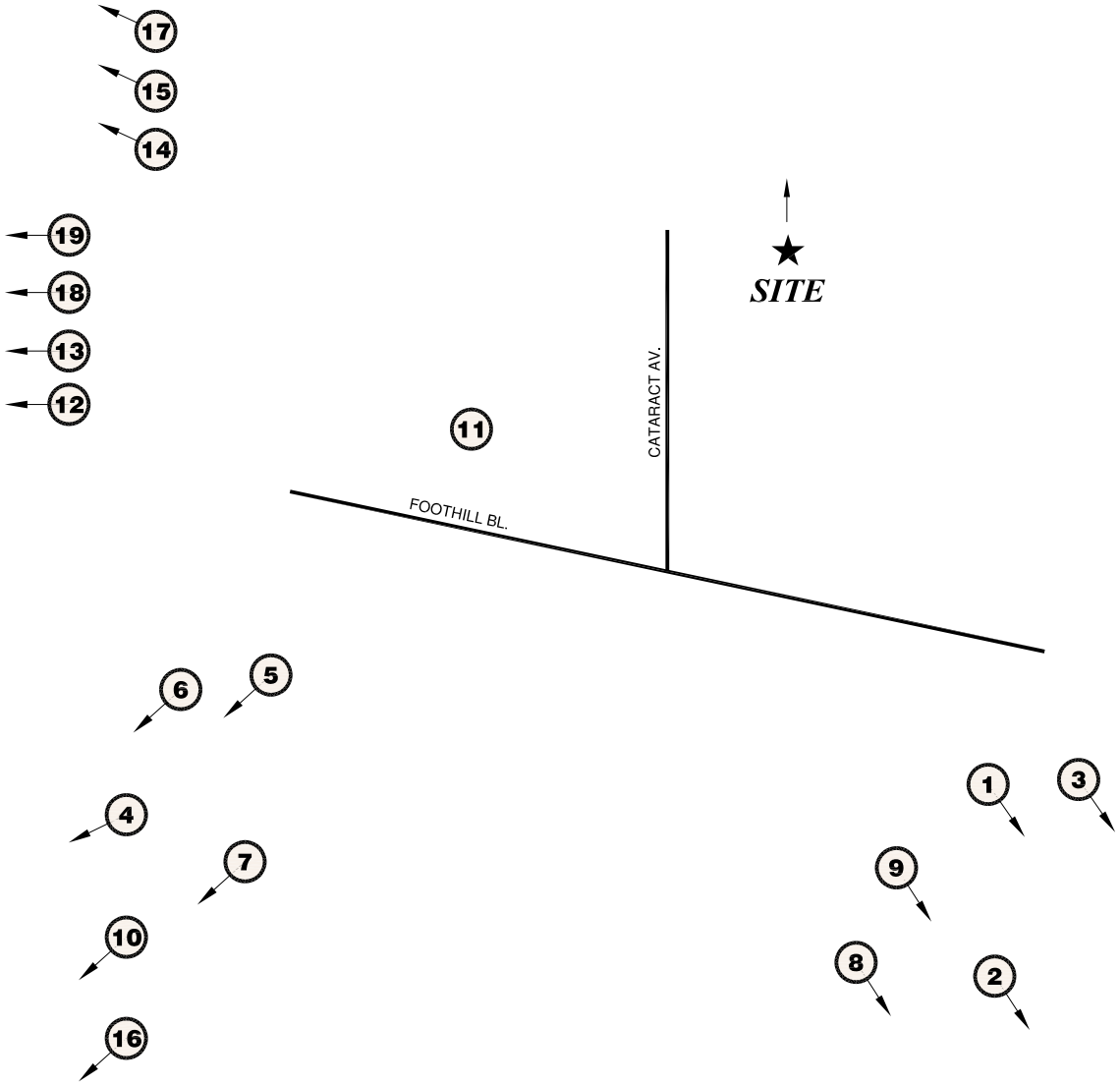
TAZ #	NAME	LAND USE[1]	QUANTITY[2]	UNITS	PEAK HOUR AM IN	PEAK HOUR AM OUT	PEAK HOUR AM TOTAL	PEAK HOUR PM IN	PEAK HOUR PM OUT	PEAK HOUR PM TOTAL	DAILY
City of San Dimas											
1	NWC Bonita Ave/San Dimas Cyn. Rd.	Apartments	156	DU	16	64	80	62	34	97	1,037
2	510 E. Arrow Hwy.	Warehouse	24	TSF	6	1	7	2	6	8	86
		Office	3	TSF	10	1	11	14	68	82	86
3	671 E. Bonita Ave.	Supermarket	11	TSF	23	15	38	57	54	111	1,079
		Shopping Center	7.8	TSF	21	13	34	57	59	116	1,298
4	SEC Lone Hill/Gladstone	Discount Club	72.0	TSF	29	12	40	153	153	305	3,010
5	627 W. Allen Ave.	Office	10	TSF	26	4	30	15	75	90	227
6	818 W. Gladstone St.	Day Care	12	TSF	78	69	147	70	79	150	951
7	155 N. Eucla Ave.	Automobile Care Center	10	TSF	18	10	28	16	16	32	321
8	Grove Station - San Dimas Ave., N/O Arrow Hwy.	SFR	103	DU	20	58	77	66	38	104	986
9	245 E. Bonita Ave.	Condo	7	DU	0	3	3	2	1	4	41
		Gov. Office	15	TSF	72	14	86	6	12	18	1,007
City of Glendora											
10	Diamond Ridge	Restaurant	6.5	TSF	39	36	75	43	30	72	826
		Office	30	TSF	63	9	72	19	93	113	528
11	Cataract Glendora	Condo	17	DU	1	6	7	6	3	9	99
12	JPI Sevilla Project	Condo	161	DU	11	60	71	56	27	84	935
		Office	11.9	TSF	30	4	34	16	77	92	259
13	Glendora Station Project	Condo	87	DU	6	32	38	30	15	45	505
		Shopping Center	4.8	TSF	16	10	26	41	42	83	943
14	Tract 46680	SFR	14	DU	3	8	11	9	5	14	134
15	Tract 46916	SFR	16	DU	3	9	12	10	6	16	153
16	Glendora Commons	Shopping Center	52	TSF	64	41	105	201	210	411	4,440
17	NJD	SFR	54	DU	10	30	41	35	20	55	517
18	Grand Avenue Retail	Shopping Center	14	TSF	29	19	48	83	87	170	1,892
		Restaurant	4.2	TSF	25	23	48	28	19	47	534
19	Citrus Valley Office	Office	15	TSF	36	5	41	16	79	96	310
TOTAL					**655**	**556**	**1,210**	**1,113**	**1,308**	**2,424**	**22,204**

1 SFR = Single Family Detached Residential;

2 TSF = Thousand Square Feet; RM = Rooms; DU = Dwelling Units

EXHIBIT 4-C

CUMULATIVE DEVELOPMENTS LOCATION MAP



LEGEND:

1 = NWC BONITA AVENUE/ SAN DIMAS CANYON ROAD
2 = 510 E. ARROW HIGHWAY
3 = 671 E. BONITA AVENUE
4 = SEC LONE HILL/GLADSTONE
5 = 627 W. ALLEN AVENUE
6 = 818 W. GLADSTONE STREET
7 = 155 N. EUCLA AVENUE
8 = GROVE STATION - SAN DIMAS AVENUE, N/O ARROW HIGHWAY
9 = 245 E. BONITA AVENUE
10 = DIAMOND RIDGE
11 = CATARACT GLENDORA
12 = JPI SEVILLA PROJECT
13 = GLENDORA STATION PROJECT
14 = TRACT 46680
15 = TRACT 46916
16 = GLENDORA COMMONS
17 = NJD
18 = GRAND AVENUE RETAIL
19 = CITRUS VALLEY OFFICE

N

Based on the identified trip distributions for the cumulative developments on arterial highways throughout the study area for future conditions ADT volumes are shown on Exhibit 4-D. Cumulative development AM and PM peak hour intersection turning movement volumes for future conditions are also shown on Exhibit 4-D.

3. Through Traffic

To account for area-wide growth on roadways, 2017 traffic volumes have been calculated based on a two (2) percent annual growth rate of existing traffic volumes over a seven (7) year period for a total of fourteen (14) percent.

The remaining growth is anticipated to be accounted for other projects in the study area that have been approved or are being processed concurrently. The other developments were listed previously in Table 4-3.

Area-wide growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the project and cumulative development.

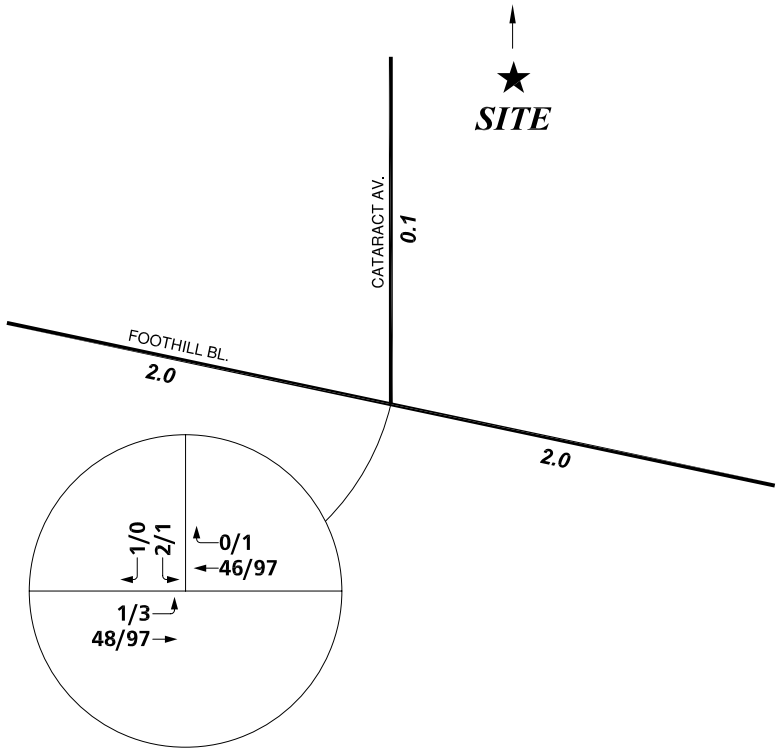
C. Total Traffic

The traffic volumes are illustrated for the following conditions:

- Existing + Ambient Growth + Project – Exhibit 4-E
- Existing + Ambient Growth + Cumulative Projects – Exhibit 4-F
- Existing + Ambient Growth + Cumulative Projects + Project – Exhibit 4-G

EXHIBIT 4-D

CUMULATIVE DEVELOPMENT TRAFFIC VOLUMES



LEGEND:

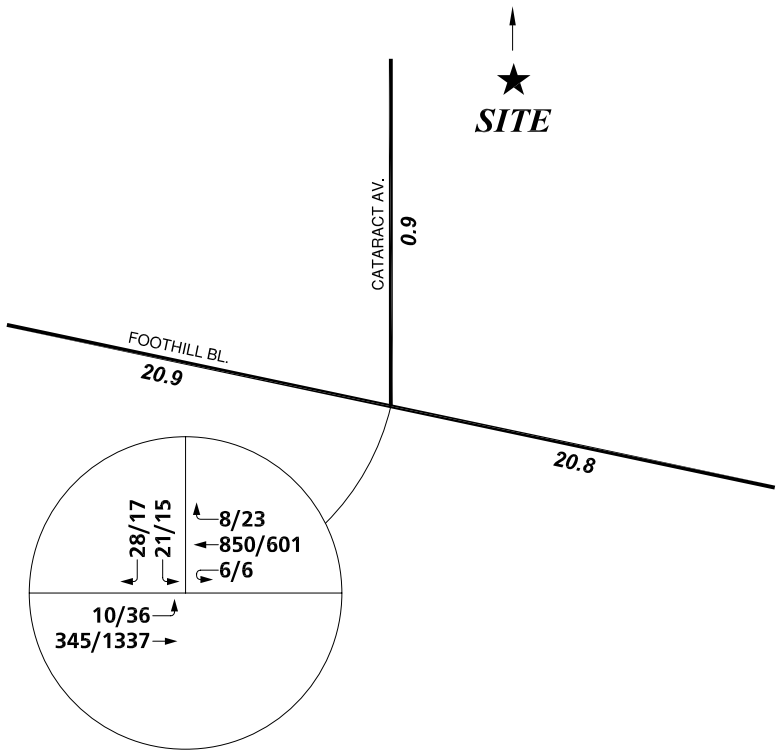
5/16 = AM/PM PEAK HOUR VOLUMES

10.0 = VEHICLES PER DAY (1000'S)

N

EXHIBIT 4-E

EXISTING PLUS AMBIENT PLUS PROJECT TRAFFIC VOLUMES



LEGEND:

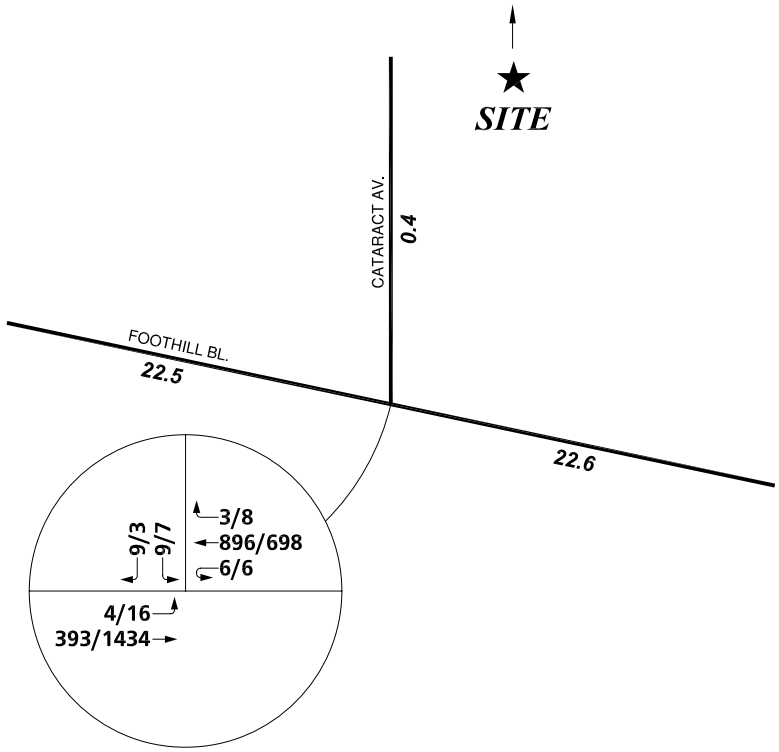
8/22 = AM/PM PEAK HOUR VOLUMES

10.0 = VEHICLES PER DAY (1000'S)

N

EXHIBIT 4-F

EXISTING PLUS AMBIENT PLUS CUMULATIVE TRAFFIC VOLUMES



LEGEND:

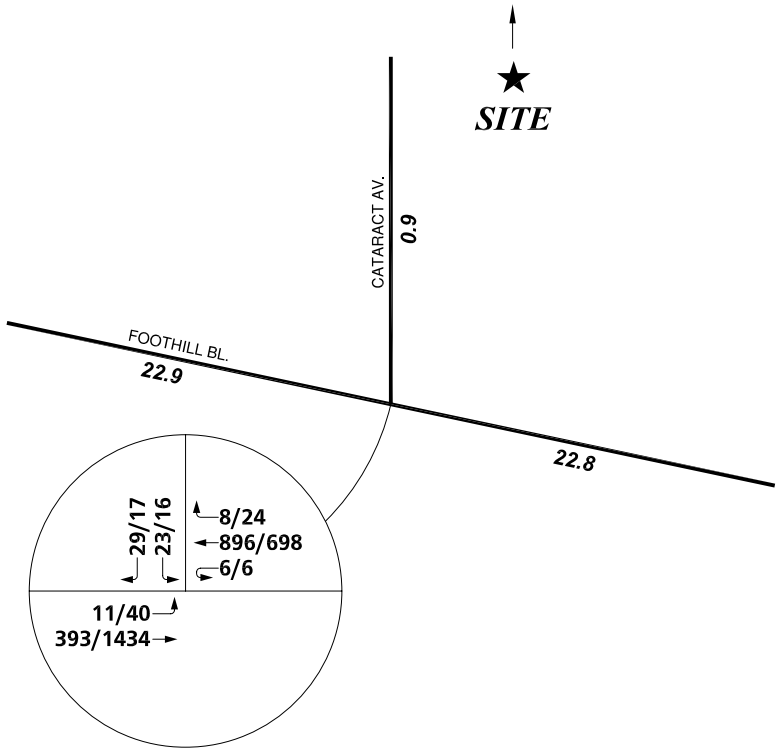
4/15 = AM/PM PEAK HOUR VOLUMES

10.0 = VEHICLES PER DAY (1000'S)

N

EXHIBIT 4-G

EXISTING PLUS AMBIENT PLUS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES



LEGEND:

8/24 = AM/PM PEAK HOUR VOLUMES

10.0 = VEHICLES PER DAY (1000'S)

N

5.0 TRAFFIC ANALYSIS

A. Level of Service 2017 Conditions

1. Level of Service for Existing + Ambient Growth + Project Conditions

The City requires this scenario to identify the potential impacts that are directly attributed to the project. Based on the current intersection geometry and traffic controls (stop sign) at the study intersection, no significant impacts were identified. Table 5-1 summarizes the level of service analysis for the intersection of Cataract Avenue/Foothill Blvd.

The Existing + Ambient + Project conditions HCM calculation worksheets are provided in Appendix "E".

2. Level of Service for 2017 Without Project Conditions

Intersection levels of service for the existing roadway network for 2017 without the proposed project are shown in Table 5-2. Table 5-2 shows HCM calculations based on the lane configuration at the study area intersections without improvements.

For 2017 without project traffic conditions, the study area intersection is projected to operate at acceptable levels of service during the peak hours, with existing geometry.

2017 without project conditions HCM calculation worksheets are provided in Appendix "F".

TABLE 5-1

INTERSECTION ANALYSIS FOR EXISTING + AMBIENT GROWTH + PROJECT CONDITIONS

INTERSECTION	TRAFFIC CONTROL [1]	INTERSECTION APPROACH LANES [2]												DELAY [3] (SECS.)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Cataract Ave. (NS) at: • Foothill Blvd (EW)	CSS	0	0	0	0	1	0	1	2	0	1	2	0	17.3	22.2	C	C

[1] CSS = Cross Street Stop

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; 1! = Shared Left-Through-Right Lane; > = Right Turn Overlap Phase; >> Free Right Turn Lane;

[3] Delay and level of service calculated using the following analysis software: Traffix, Version 8.0 (2008).
Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

TABLE 5-2

INTERSECTION ANALYSIS FOR EXISTING + AMBIENT GROWTH + RELATED PROJECTS (YEAR 2017 WITHOUT PROJECT)

INTERSECTION	TRAFFIC CONTROL [1]	INTERSECTION APPROACH LANES [2]												DELAY [3] (SECS.)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Cataract Ave. (NS) at:																	
• Foothill Blvd (EW)	CSS	0	0	0	0	1	0	1	2	0	1	2	0	17.8	28.3	C	D

[1] CSS = Cross Street Stop

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; 1! = Shared Left-Through-Right Lane; > = Right Turn Overlap Phase; >> Free Right Turn Lane;

[3] Delay and level of service calculated using the following analysis software: Traffix, Version 8.0 (2008).
Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

3. Level of Service for 2017 With Project Conditions

Intersection levels of service for the existing roadway network for 2017 with the proposed project are shown in Table 5-3. Table 5-3 shows HCM calculations based on the lane configuration at the study area intersections without improvements.

For 2017 with project traffic conditions, the study area intersections are projected to operate at acceptable levels of service during the peak hours, with existing geometry. 2017 with project conditions HCM calculation worksheets are provided in Appendix "G".

TABLE 5-3

INTERSECTION ANALYSIS FOR EXISTING + AMBIENT GROWTH + RELATED PROJECTS + PROJECT (YEAR 2017 WITH PROJECT)

INTERSECTION	TRAFFIC CONTROL [1]	INTERSECTION APPROACH LANES [2]												DELAY [3] (SECS.)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Cataract Ave. (NS) at:																	
• Foothill Blvd (EW)	CSS	0	0	0	0	1	0	1	2	0	1	2	0	19.0	29.9	C	D

[1] CSS = Cross Street Stop

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; 1! = Shared Left-Through-Right Lane; > = Right Turn Overlap Phase; >> Free Right Turn Lane;

[3] Delay and level of service calculated using the following analysis software: Traffix, Version 8.0 (2008). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

6.0 FINDINGS AND CONCLUSIONS

A. Off-site Traffic Impacts and Level of Service

The service level calculations provided in this study indicated that the study intersection of Cataract Avenue/Foothill Blvd. is expected to operate at acceptable levels with the development of the proposed project. Therefore, if the current stop configuration is maintained, no additional geometric improvements at this location are necessary.

B. On-site Circulation Recommendations

1. On-site Improvements

Circulation and on-site intersection improvement recommendations are described below:

- Sight distance at the internal project intersections should be reviewed with respect to standard Caltrans/City of San Dimas sight distance standards at the time of preparation of final grading, landscape and street improvement plans.

- Traffic signing and striping should be implemented in conjunction with detailed construction plans for the project site.

APPENDIX A

TRAFFIC COUNT WORKSHEETS

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	GLENDORA	PROJECT #:	CA10-0625-02
6/24/10	NORTH & SOUTH:	CATARACT	LOCATION #:	1
THURSDAY	EAST & WEST:	FOOTHILL	CONTROL:	1-WAY STOP: SB

NOTES:

WL IS U-TURN ONLY.

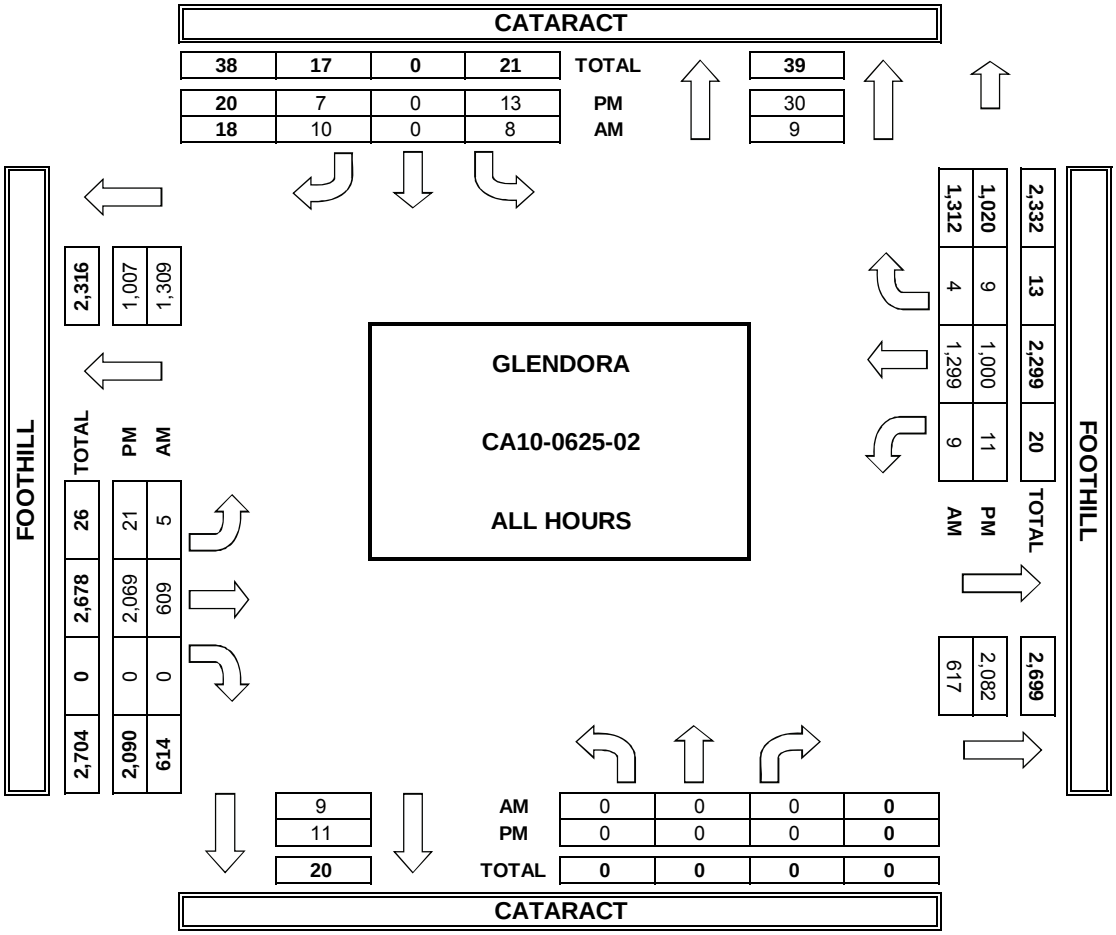
AM
PM
MD
OTHER
OTHER

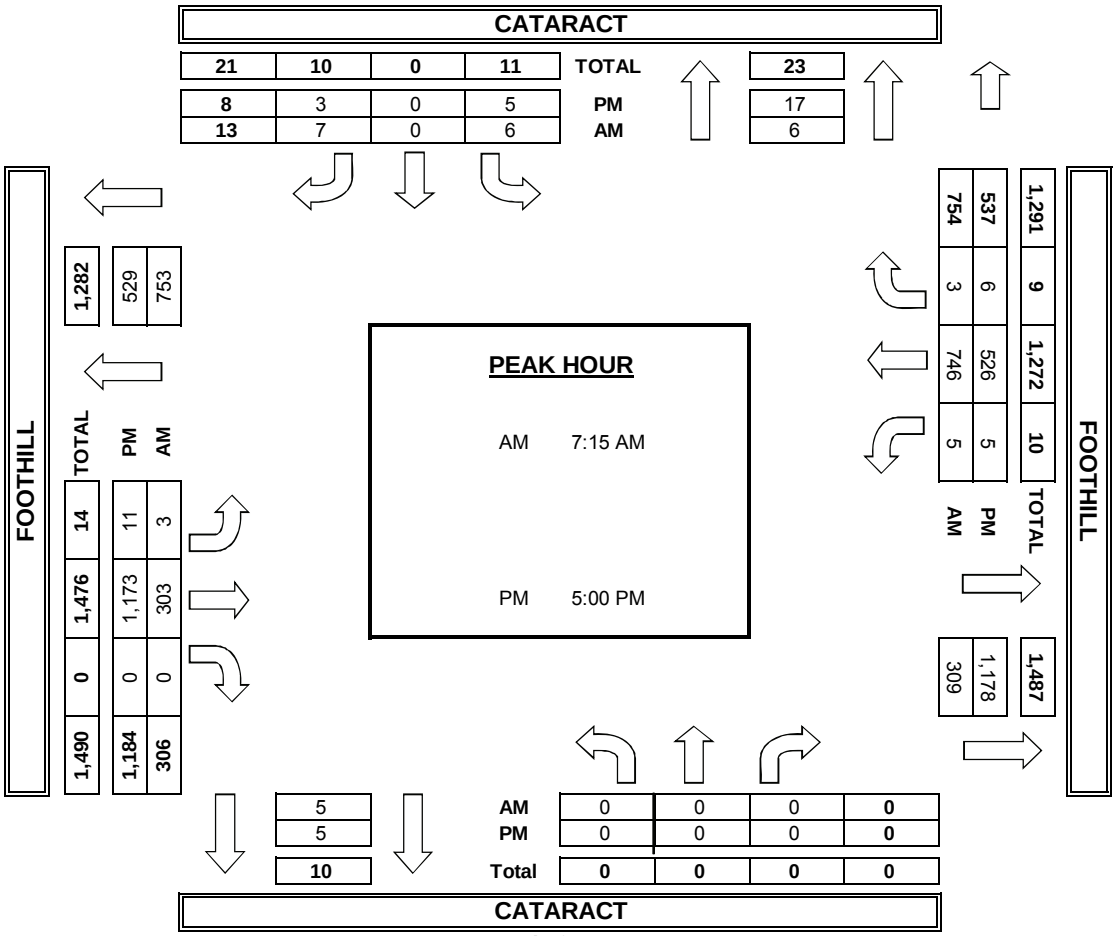
▲ N
◄ W E ►
S ▼

		NORTHBOUND CATARACT			SOUTHBOUND CATARACT			EASTBOUND FOOTHILL			WESTBOUND FOOTHILL			
	LANES:	NL X	NT X	NR X	SL 0.5	ST X	SR 0.5	EL 1	ET 2	ER X	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM				0		0	1	54		0	152	0	207
	7:15 AM				0		1	1	64		1	174	0	241
	7:30 AM				1		1	1	83		2	218	0	306
	7:45 AM				1		0	1	79		0	195	1	277
	8:00 AM				4		5	0	77		2	159	2	249
	8:15 AM				0		1	0	75		1	150	0	227
	8:30 AM				0		0	1	82		0	124	0	207
	8:45 AM				2		2	0	95		3	127	1	230
	VOLUMES	0	0	0	8	0	10	5	609	0	9	1,299	4	1,944
	APPROACH %	0%	0%	0%	44%	0%	56%	1%	99%	0%	1%	99%	0%	
	APP/DEPART	0	/	9	18	/	9	614	/	617	1,312	/	1,309	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	6	0	7	3	303	0	5	746	3	1,073
	APPROACH %	0%	0%	0%	46%	0%	54%	1%	99%	0%	1%	99%	0%	
	PEAK HR FACTOR		0.000			0.361			0.911			0.857		0.877
	APP/DEPART	0	/	6	13	/	5	306	/	309	754	/	753	0
PM	4:00 PM				2		0	1	225		2	123	1	354
	4:15 PM				2		1	3	202		1	131	0	340
	4:30 PM				1		1	2	204		1	91	0	300
	4:45 PM				3		2	4	265		2	129	2	407
	5:00 PM				1		1	4	277		1	139	1	424
	5:15 PM				0		0	2	311		1	120	1	435
	5:30 PM				1		1	3	287		1	152	1	446
	5:45 PM				3		1	2	298		2	115	3	424
	VOLUMES	0	0	0	13	0	7	21	2,069	0	11	1,000	9	3,130
	APPROACH %	0%	0%	0%	65%	0%	35%	1%	99%	0%	1%	98%	1%	
	APP/DEPART	0	/	30	20	/	11	2,090	/	2,082	1,020	/	1,007	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	5	0	3	11	1,173	0	5	526	6	1,729
	APPROACH %	0%	0%	0%	63%	0%	38%	1%	99%	0%	1%	98%	1%	
	PEAK HR FACTOR		0.000			0.500			0.946			0.872		0.969
	APP/DEPART	0	/	17	8	/	5	1,184	/	1,178	537	/	529	0

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS





THURSDAY - JUNE 24, 2010 CITY: GLENDORA PROJECT: CA10-0625-02-001

FOOTHILL W/O CATARACT

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			15		17			12:00			118		116		
00:15			16		15			12:15			135		127		
00:30			14		8			12:30			141		116		
00:45			14	59	6	46	105	12:45			148	542	110	469	1011
01:00			8		7			13:00			141		133		
01:15			10		13			13:15			144		137		
01:30			9		14			13:30			118		109		
01:45			9	36	4	38	74	13:45			134	537	119	498	1035
02:00			3		3			14:00			128		125		
02:15			3		4			14:15			150		154		
02:30			5		4			14:30			131		124		
02:45			2	13	0	11	24	14:45			158	567	133	536	1103
03:00			3		4			15:00			161		109		
03:15			4		6			15:15			165		122		
03:30			2		4			15:30			170		122		
03:45			4	13	7	21	34	15:45			193	689	126	479	1168
04:00			4		7			16:00			220		133		
04:15			4		7			16:15			211		129		
04:30			6		10			16:30			229		139		
04:45			9	23	11	35	58	16:45			249	909	105	506	1415
05:00			11		17			17:00			268		141		
05:15			19		22			17:15			281		147		
05:30			19		29			17:30			275		147		
05:45			18	67	43	111	178	17:45			264	1088	156	591	1679
06:00			22		57			18:00			263		134		
06:15			23		72			18:15			258		119		
06:30			24		81			18:30			246		142		
06:45			33	102	129	339	441	18:45			223	990	125	520	1510
07:00			41		147			19:00			150		118		
07:15			57		169			19:15			133		107		
07:30			71		200			19:30			119		101		
07:45			93	262	223	739	1001	19:45			106	508	96	422	930
08:00			90		207			20:00			98		92		
08:15			86		223			20:15			105		102		
08:30			82		176			20:30			77		88		
08:45			93	351	167	773	1124	20:45			75	355	77	359	714
09:00			85		131			21:00			66		81		
09:15			88		121			21:15			55		82		
09:30			88		124			21:30			53		55		
09:45			92	353	116	492	845	21:45			48	222	71	289	511
10:00			102		121			22:00			46		60		
10:15			95		105			22:15			43		44		
10:30			96		107			22:30			38		43		
10:45			94	387	114	447	834	22:45			26	153	34	181	334
11:00			95		98			23:00			40		39		
11:15			115		145			23:15			21		28		
11:30			108		131			23:30			20		22		
11:45			116	434	119	493	927	23:45			24	105	18	107	212
Total Vol.				2100		3545	**5645**					6665		4957	**11622**

Daily Totals

NB	SB	EB	WB	**Combined**
		8765	8502	**17267**

	AM			**PM**		
Split %	37.2%	62.8%	**32.7%**	57.3%	42.7%	**67.3%**
Peak Hour	11:45	07:30	**07:30**	17:00	17:00	**17:00**
Volume	510	853	**1193**	1088	591	**1679**
P.H.F.	0.90	0.96	**0.94**	0.97	0.95	**0.98**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

THURSDAY - JUNE 24, 2010 CITY: GLENDORA PROJECT: CA10-0625-02-002

FOOTHILL E/O CATARACT

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			15		13			12:00			127		119		
00:15			19		17			12:15			132		130		
00:30			10		4			12:30			147		104		
00:45			14	58	8	42	100	12:45			139	545	129	482	1027
01:00			14		10			13:00			132		132		
01:15			13		13			13:15			105		120		
01:30			6		7			13:30			152		114		
01:45			3	36	4	34	70	13:45			137	526	116	482	1008
02:00			2		3			14:00			123		147		
02:15			4		4			14:15			136		148		
02:30			4		1			14:30			123		121		
02:45			2	12	1	9	21	14:45			159	541	109	525	1066
03:00			2		6			15:00			142		112		
03:15			2		7			15:15			171		129		
03:30			3		1			15:30			169		122		
03:45			3	10	7	21	31	15:45			195	677	126	489	1166
04:00			1		10			16:00			209		131		
04:15			6		4			16:15			211		136		
04:30			7		14			16:30			226		134		
04:45			8	22	11	39	61	16:45			272	918	109	510	1428
05:00			8		17			17:00			245		152		
05:15			20		21			17:15			293		142		
05:30			17		29			17:30			312		136		
05:45			18	63	36	103	166	17:45			274	1124	172	602	1726
06:00			21		70			18:00			259		132		
06:15			30		92			18:15			247		115		
06:30			21		99			18:30			255		137		
06:45			30	102	129	390	492	18:45			234	995	112	496	1491
07:00			46		154			19:00			155		128		
07:15			64		185			19:15			129		120		
07:30			69		167			19:30			128		85		
07:45			92	271	216	722	993	19:45			114	526	106	439	965
08:00			87		213			20:00			102		87		
08:15			88		221			20:15			108		86		
08:30			93		185			20:30			80		82		
08:45			96	364	167	786	1150	20:45			68	358	80	335	693
09:00			88		133			21:00			71		73		
09:15			89		125			21:15			62		69		
09:30			90		122			21:30			50		68		
09:45			89	356	121	501	857	21:45			55	238	74	284	522
10:00			100		120			22:00			53		55		
10:15			92		110			22:15			40		41		
10:30			93		105			22:30			25		42		
10:45			95	380	115	450	830	22:45			29	147	40	178	325
11:00			103		111			23:00			31		26		
11:15			113		138			23:15			28		22		
11:30			111		123			23:30			22		15		
11:45			119	446	131	503	949	23:45			21	102	22	85	187
Total Vol.				2120		3600	**5720**					6697		4907	**11604**

Daily Totals

NB	SB	EB	WB	**Combined**
		8817	8507	**17324**

	AM			**PM**		
Split %	37.1%	62.9%	**33.0%**	57.7%	42.3%	**67.0%**
Peak Hour	11:45	07:45	**07:45**	17:15	17:00	**17:00**
Volume	525	835	**1195**	1138	602	**1726**
P.H.F.	0.89	0.94	**0.97**	0.91	0.88	**0.96**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

THURSDAY - JUNE 24, 2010 CITY: GLENDORA PROJECT: CA10-0625-02-003

CATARACT N/O FOOTHILL

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	1		1				
00:15	1		0					12:15	5		3				
00:30	0		1					12:30	3		4				
00:45	0	1	0	1			2	12:45	2	11	4	12			23
01:00	0		0					13:00	2		1				
01:15	0		0					13:15	2		3				
01:30	0		0					13:30	1		2				
01:45	0	0	0	0				13:45	7	12	2	8			20
02:00	0		0					14:00	3		1				
02:15	0		0					14:15	1		5				
02:30	0		0					14:30	4		2				
02:45	0	0	0	0				14:45	3	11	3	11			22
03:00	0		0					15:00	2		3				
03:15	0		0					15:15	4		2				
03:30	0		0					15:30	2		1				
03:45	0	0	0	0				15:45	3	11	1	7			18
04:00	1		0					16:00	1		2				
04:15	0		0					16:15	3		3				
04:30	0		0					16:30	2		2				
04:45	0	1	1	1			2	16:45	6	12	5	12			24
05:00	0		2					17:00	5		2				
05:15	1		2					17:15	3		0				
05:30	0		0					17:30	4		2				
05:45	0	1	2	6			7	17:45	5	17	4	8			25
06:00	0		0					18:00	5		2				
06:15	0		3					18:15	3		1				
06:30	1		0					18:30	4		5				
06:45	1	2	1	4			6	18:45	5	17	2	10			27
07:00	1		0					19:00	2		3				
07:15	1		1					19:15	5		0				
07:30	1		2					19:30	1		0				
07:45	2	5	1	4			9	19:45	3	11	5	8			19
08:00	2		9					20:00	2		0				
08:15	0		1					20:15	1		2				
08:30	1		0					20:30	0		3				
08:45	1	4	4	14			18	20:45	0	3	0	5			8
09:00	2		2					21:00	0		0				
09:15	0		1					21:15	0		1				
09:30	1		4					21:30	1		3				
09:45	0	3	1	8			11	21:45	0	1	2	6			7
10:00	1		0					22:00	0		3				
10:15	1		3					22:15	1		0				
10:30	1		1					22:30	3		0				
10:45	0	3	0	4			7	22:45	0	4	0	3			7
11:00	2		1					23:00	0		0				
11:15	0		1					23:15	1		1				
11:30	2		2					23:30	0		0				
11:45	1	5	1	5			10	23:45	0	1	0	1			2
Total Vol.		25		47			**72**			111		91			**202**

Daily Totals

NB	SB	EB	WB	**Combined**
136	138			**274**

	AM			**PM**		
Split %	34.7%	65.3%	**26.3%**	55.0%	45.0%	**73.7%**
Peak Hour	11:45	08:00	**07:15**	16:45	14:15	**17:45**
Volume	10	14	**19**	18	13	**29**
P.H.F.	0.50	0.39	**0.43**	0.71	0.65	**0.81**

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

APPENDIX B

EXISTING CONDITIONS HCM CALCULATION WORKSHEETS

BRASADA TRAFFIC IMPACT ANALYSIS (JN 7358)
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[14.5]

Street Name:	Cataract						Foothill Bl.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0		0 0	1! 0	0	1 0	2 0	0	1 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	6	0	7	3	303	0	5	746	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	7	3	303	0	5	746	3
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	6	0	7	3	303	0	5	746	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	6	0	7	3	303	0	5	746	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	6	0	7	3	303	0	5	746	3
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	915	1067	375	749	xxxx	xxxxx	303	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	276	224	629	869	xxxx	xxxxx	1269	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	274	222	629	869	xxxx	xxxxx	1269	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.02	0.00	0.01	0.00	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	394	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	14.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			14.5			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

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BRASADA TRAFFIC IMPACT ANALYSIS (JN 7358)
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[18.9]

Street Name:	Cataract						Foothill Bl.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	1 0	2 0	0	1 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	5	0	3	11	1173	0	5	526	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	5	0	3	11	1173	0	5	526	6
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	5	0	3	11	1173	0	5	526	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	5	0	3	11	1173	0	5	526	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	5	0	3	11	1173	0	5	526	6
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1148	1734	266	532	xxxx	xxxxx	1173	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	195	89	738	1046	xxxx	xxxxx	603	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	193	87	738	1046	xxxx	xxxxx	603	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	0.00	0.00	0.01	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	11.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	266	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	18.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx				18.9		xxxxxx			xxxxxx		
ApproachLOS:		*			C			*			*	

Note: Queue reported is the number of cars per lane.

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APPENDIX C

TRAFFIC SIGNAL WARRANTS

PEAK HOUR VOLUME WARRANT
(Urban Area)

Peak Hour Warrants
AM Peak Hour

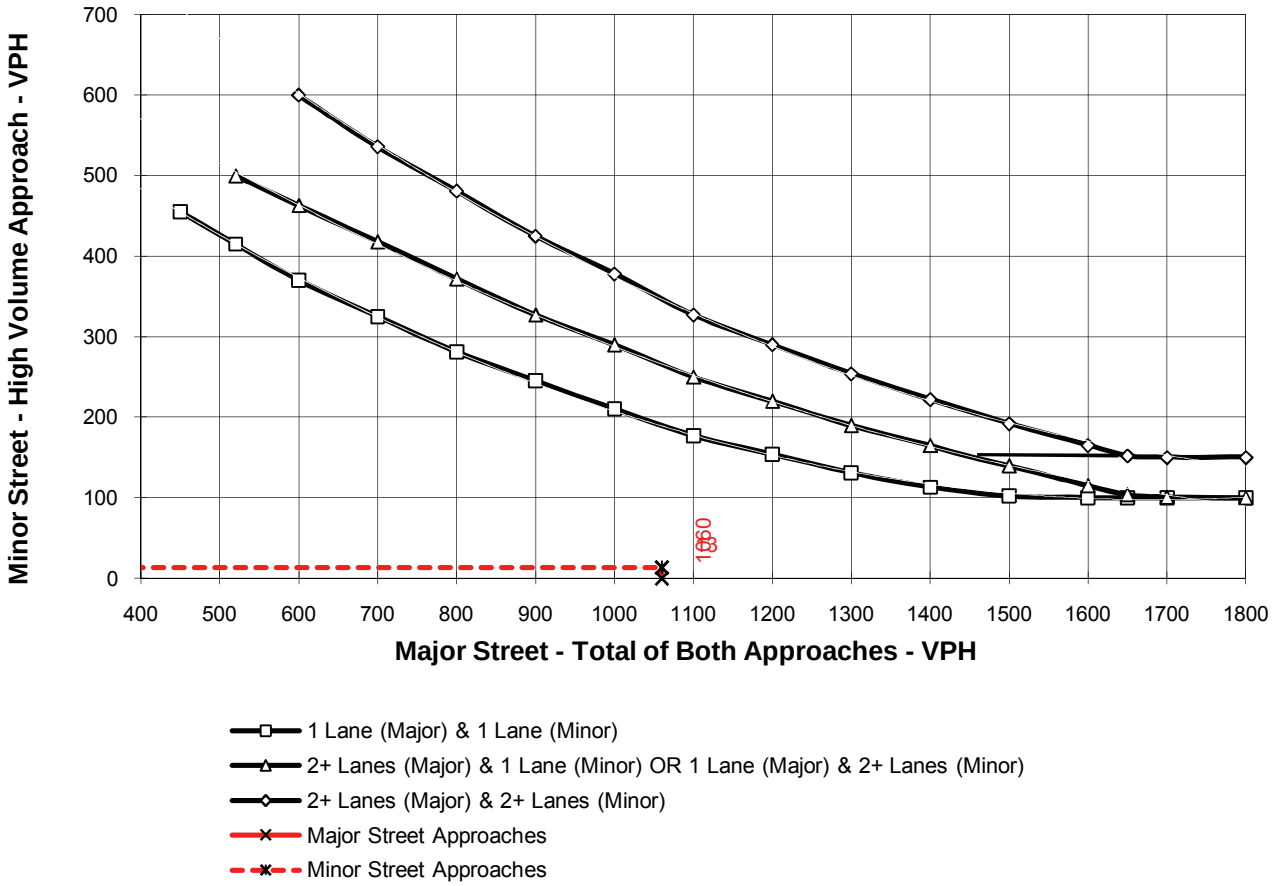
Major Street Name = **Urban Major**

Total of Both Approaches (VPH) = **1060**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Urban Minor**

High Volume Approach (VPH) = **13**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Urban Area)

Peak Hour Warrants
PM Peak Hour

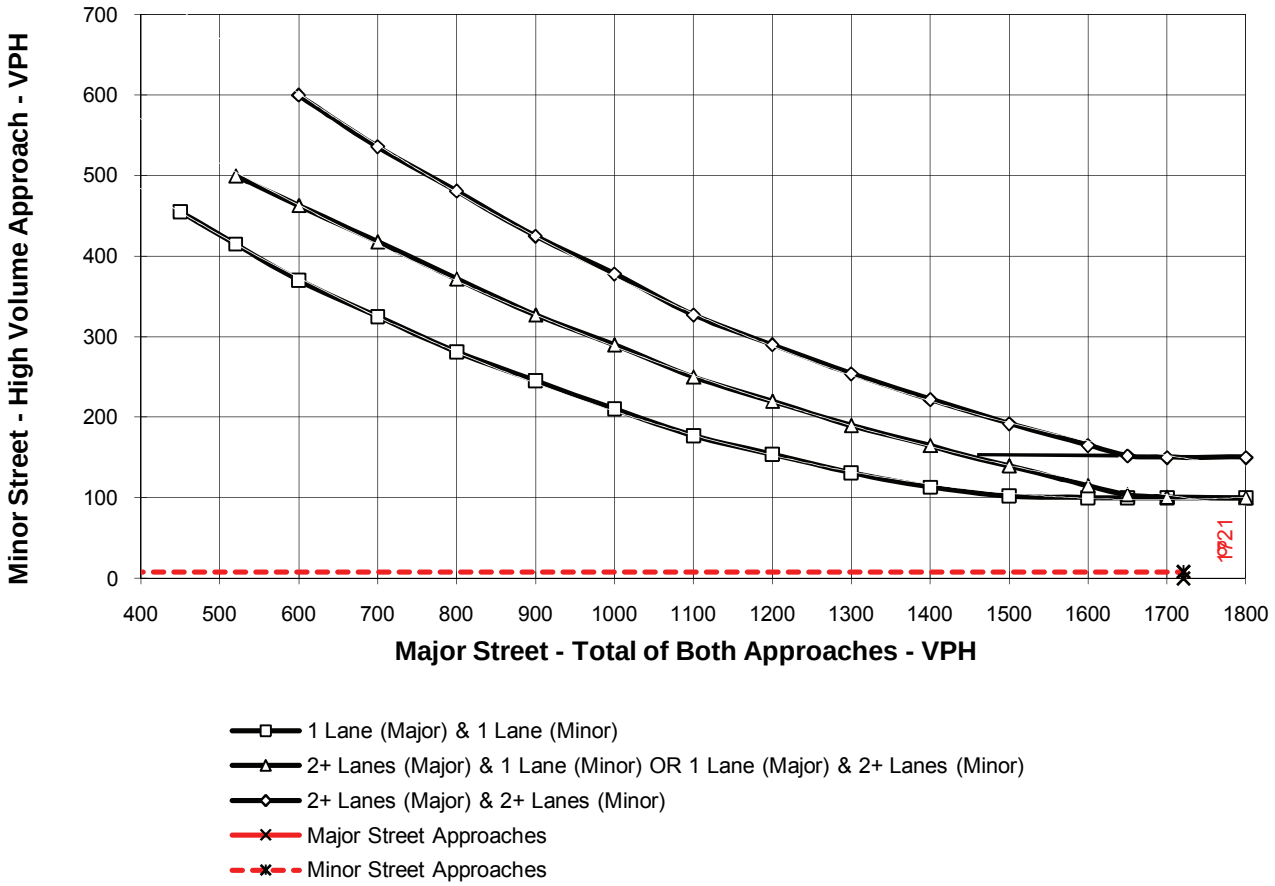
Major Street Name = **Urban Major**

Total of Both Approaches (VPH) = **1721**
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Urban Minor**

High Volume Approach (VPH) = **8**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Urban Crossroads, Inc. PM URBAN (less than or equal to 40mph on major st) (URBAN AREA WARRANT) 7/29/2010

TRAFFIC SIGNAL WARRANTS

(Based on Estimated Average Daily Traffic-See Note 2)

Major St: Foothill Minor St: Cataract Year = EAPC(201

Volume = 22,850 Lanes= 2 Volume = 500 Lanes= 1 (one-way)

URBAN XX RURAL	Minimum Requirements EADT	
1. Minimum Vehicular Satisfied Not Satisfied XX	Vehicles per day on major street (both approaches)	Vehicles per day on higher volume minor-street approach (one direction only)
Number of lanes for moving traffic on each approach. Major Street 22,850 Minor Street 500	Urban Rural	Urban Rural
1 1	8,000 5,600	2,400 1,680
2 + 1	9,600 * 6,720	2,400 1,680
2 + 2 +	9,600 6,720	3,200 2,240
1 2 +	8,000 5,600	3,200 2,240
2. Interruption of Continuous traffic Satisfied Not Satisfied XX	Vehicles per day on major street (both approaches)	Vehicles per day on higher volume minor-street approach (one direction only)
Number of lanes for moving traffic on each approach. Major Street 22,850 Minor Street 500	Urban Rural	Urban Rural
1 1	12,000 8,400	1,200 850
2 + 1	14,400 * 10,080	1,200 850
2 + 2 +	14,400 10,080	1,600 1,120
1 2 +	12,000 8,400	1,600 1,120
3. Combination Satisfied Not Satisfied XX No one warrant satisfied but following warrants fulfilled 80% or more.. 21% 42% 1 2	2 Warrants	2 Warrants

NOTES: 1. Heavier left turn movement from the major street may be included with minor street volume if a separate signal phase is to be provided for the left-turn movement.

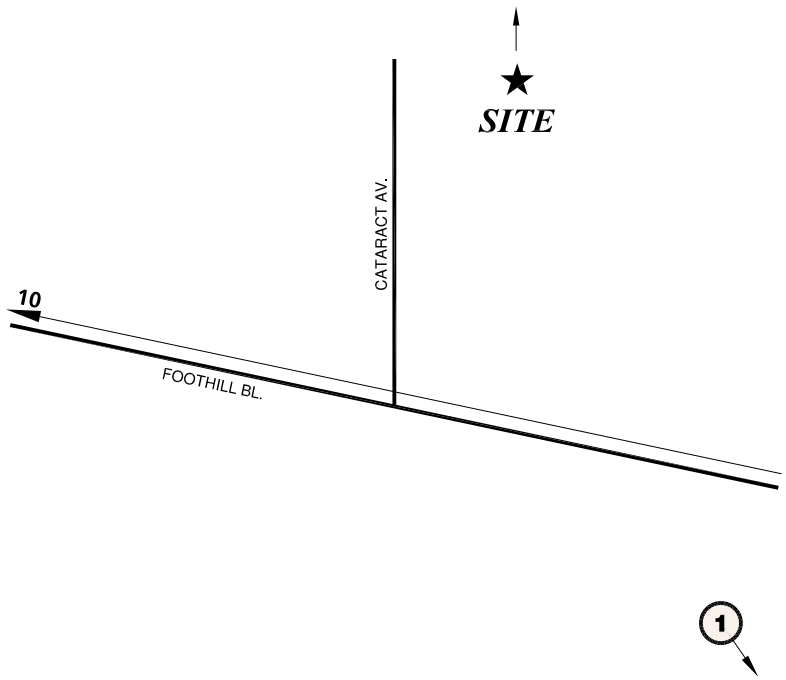
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

APPENDIX D

CUMULATIVE DEVELOPMENT TRIP DISTRIBUTIONS

EXHIBIT 1

TAZ 1 (NWC BONITA AVENUE/SAN DIMAS CANYON ROAD) TRIP DISTRIBUTION



LEGEND:

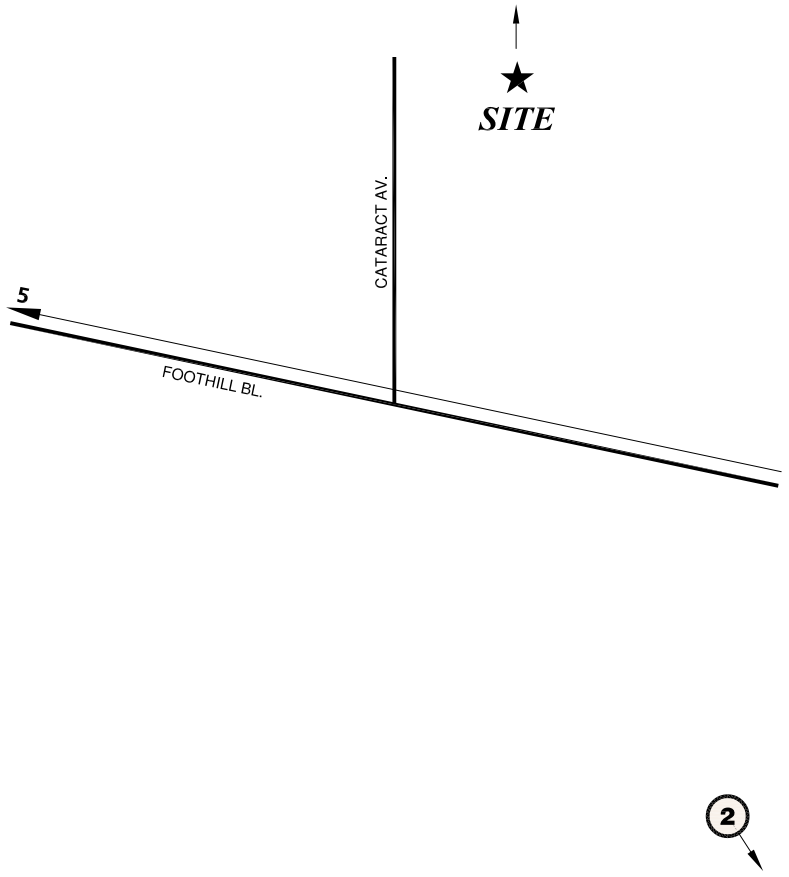
10 = PERCENT TO/FROM PROJECT

1 = TAZ 1 (NWC BONITA AVENUE/SAN DIMAS CANYON ROAD

N

EXHIBIT 2

TAZ 2 (510 E. ARROW HIGHWAY) TRIP DISTRIBUTION



LEGEND:

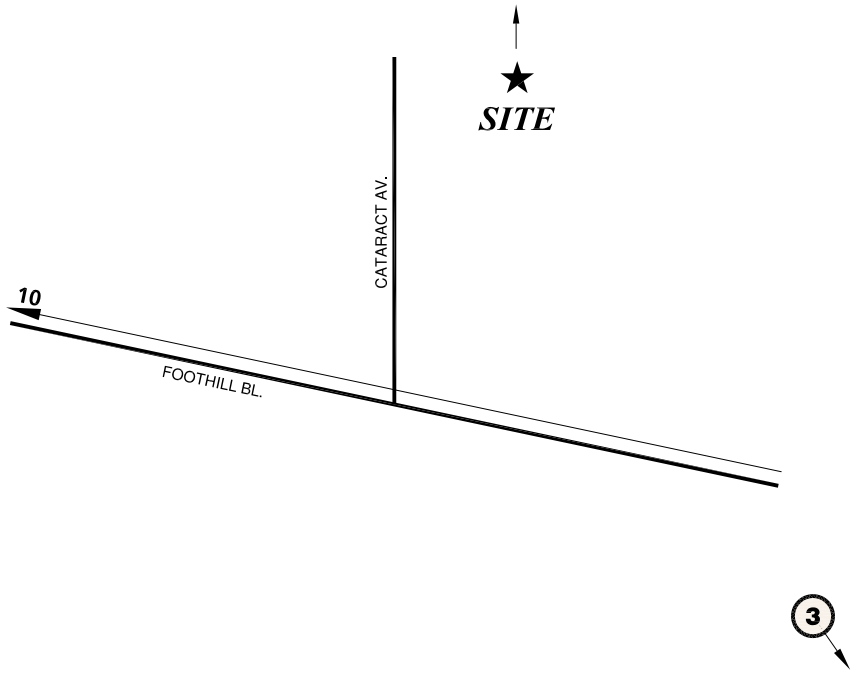
10 = PERCENT TO/FROM PROJECT

2 = TAZ 2 (510 E. ARROW HIGHWAY)

N

EXHIBIT 3

TAZ 3 (671 E. BONITA AVENUE) TRIP DISTRIBUTION



LEGEND:

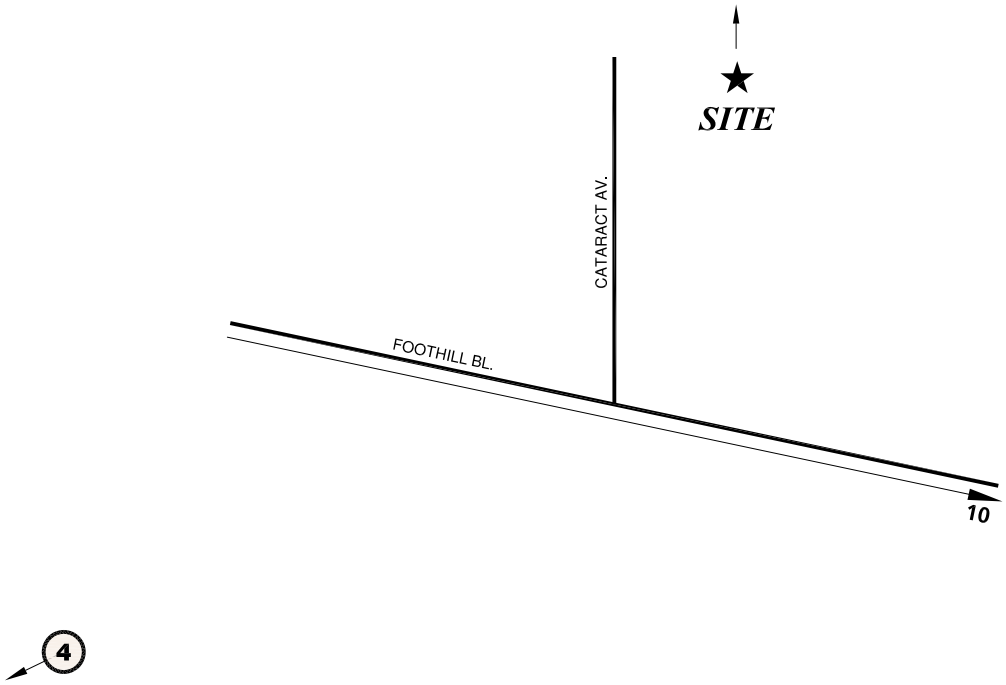
10 = PERCENT TO/FROM PROJECT

3 = TAZ 3 (671 E. BONITA AVENUE)

N

EXHIBIT 4

TAZ 4 (SEC LONE HILL/GLADSTONE) TRIP DISTRIBUTION



LEGEND:

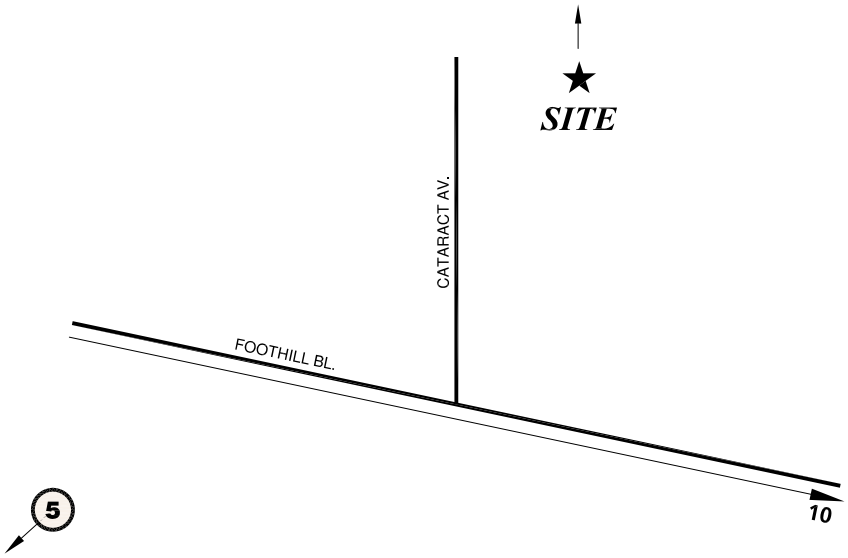
10 = PERCENT TO/FROM PROJECT

4 = TAZ 4 (SEC LONE HILL/GLADSTONE)

N

EXHIBIT 5

TAZ 5 (627 W. ALLEN AVENUE) TRIP DISTRIBUTION



LEGEND:

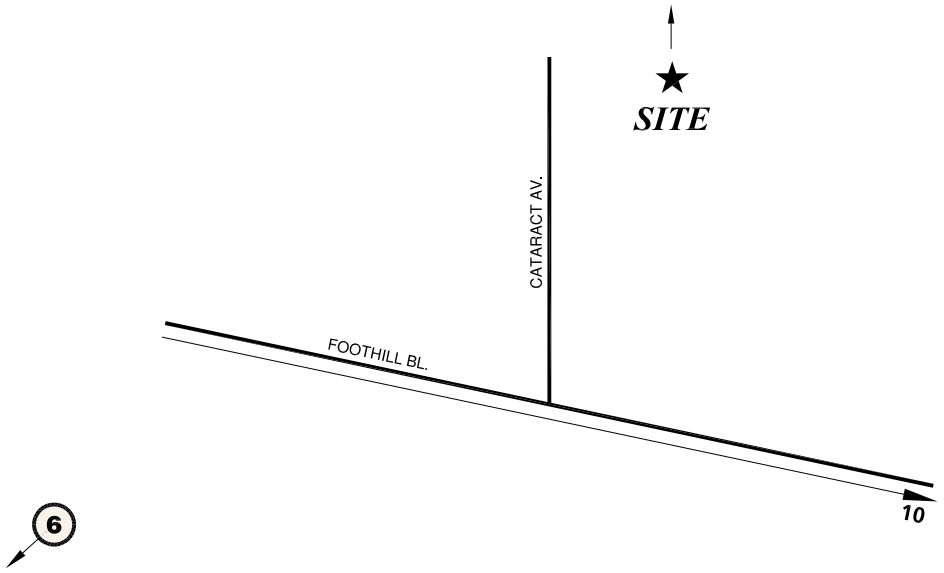
10 = PERCENT TO/FROM PROJECT

5 = TAZ 5 (627 W. ALLEN AVENUE)

N

EXHIBIT 6

TAZ 6 (818 W. GLADSTONE STREET) TRIP DISTRIBUTION



LEGEND:

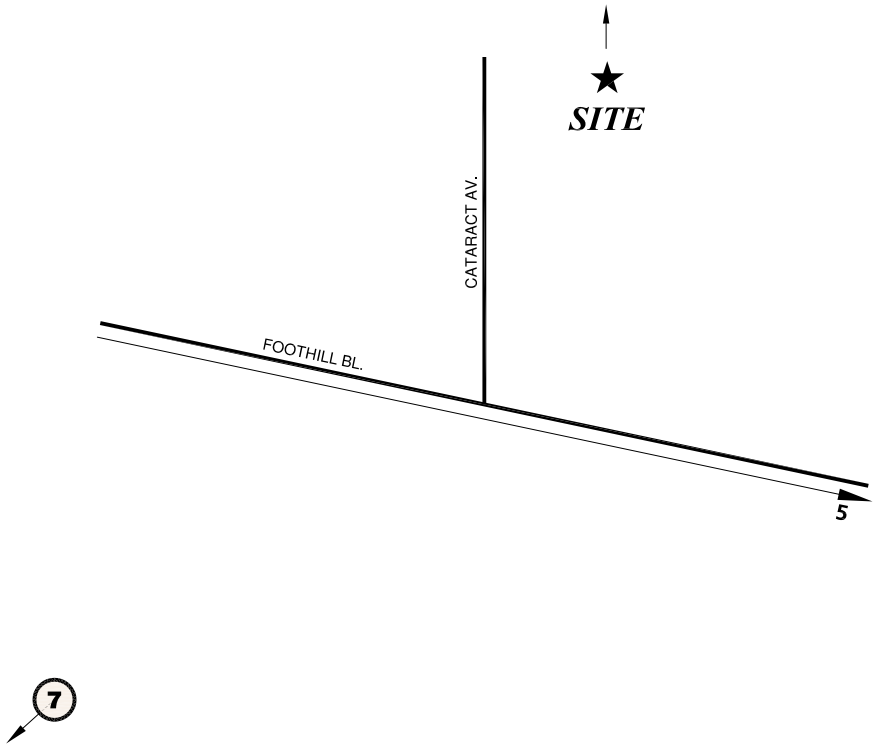
10 = PERCENT TO/FROM PROJECT

6 = TAZ 6 (818 W. GLADSTONE STREET)

N

EXHIBIT 7

TAZ 7 (155 N. EUCLA AVENUE) TRIP DISTRIBUTION



LEGEND:

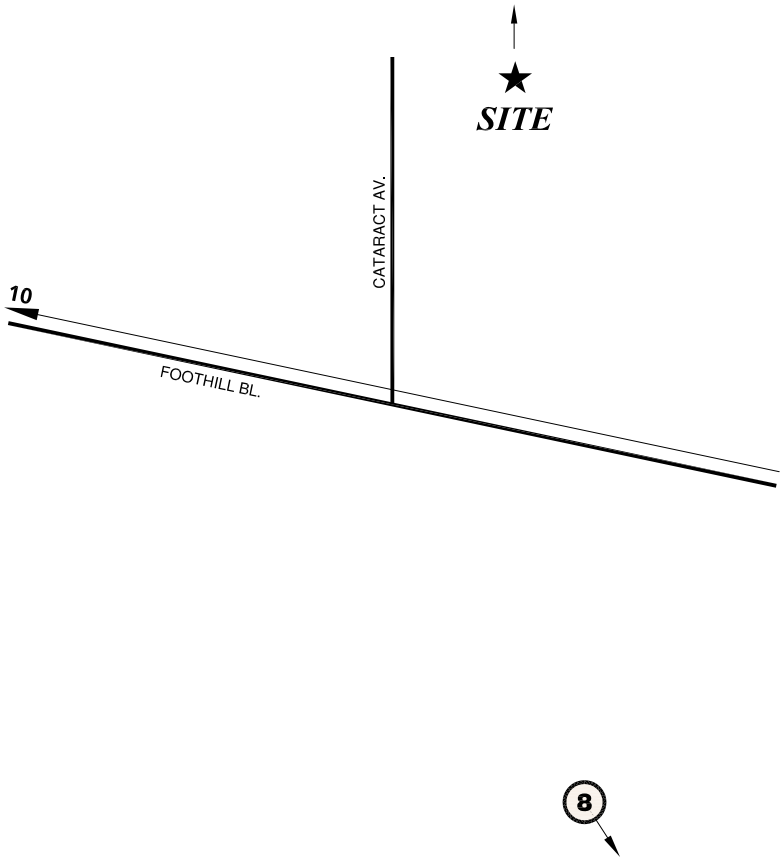
10 = PERCENT TO/FROM PROJECT

7 = TAZ 7 (155 N. EUCLA AVENUE)

N

EXHIBIT 8

TAZ 8 (GROVE STATION) TRIP DISTRIBUTION



LEGEND:

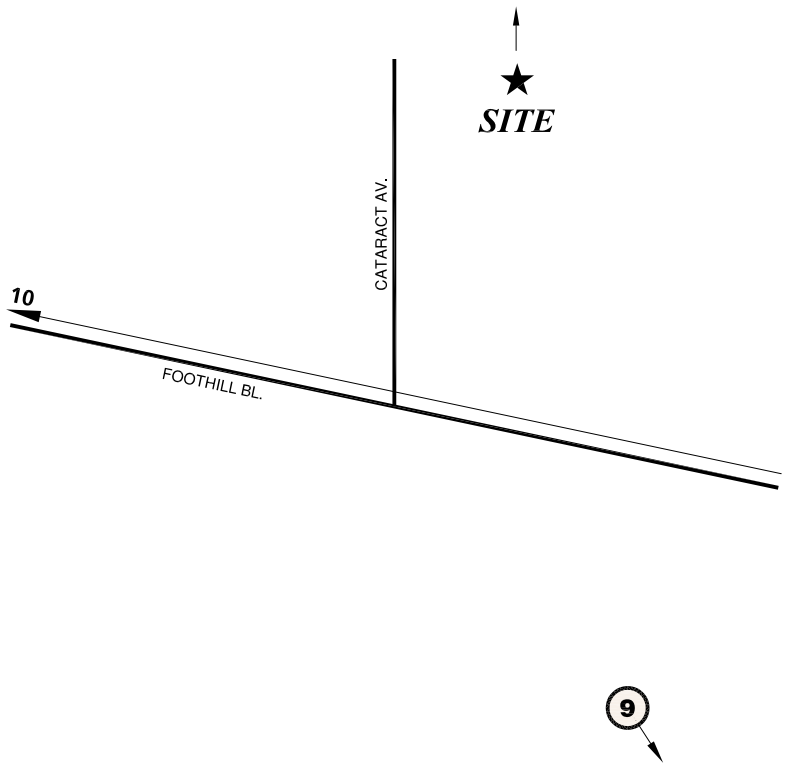
10 - PERCENT TO/FROM PROJECT

8 - TAZ 8 (GROVE STATION - SAN DIMAS AVENUE, N/O ARROW HIGHWAY)

N

EXHIBIT 9

TAZ 9 (245 E. BONITA AVENUE) TRIP DISTRIBUTION



LEGEND:

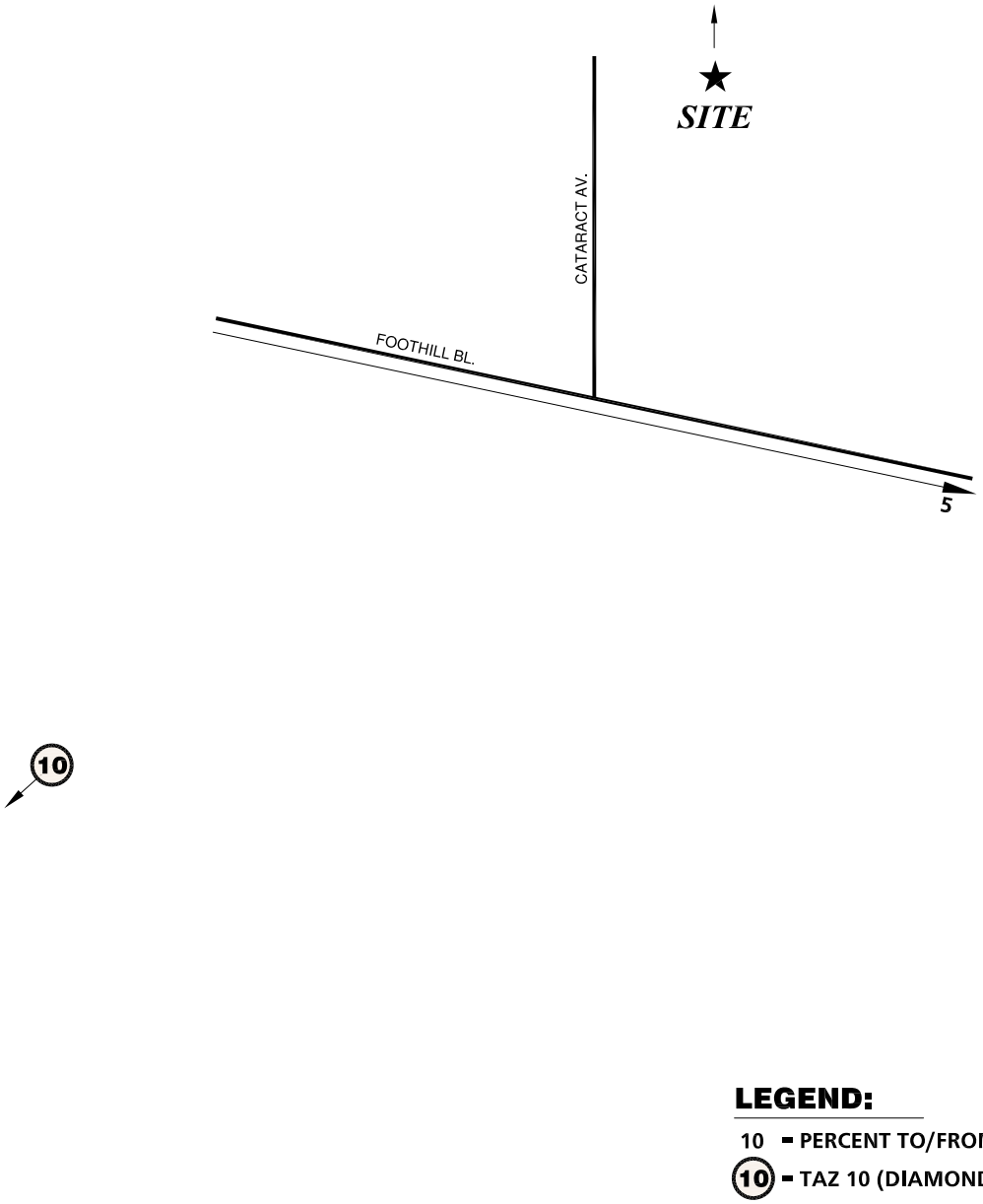
10 = PERCENT TO/FROM PROJECT

9 = TAZ 9 (245 E. BONITA AVENUE)

N

EXHIBIT 10

TAZ 10 (DIAMOND RIDGE) TRIP DISTRIBUTION



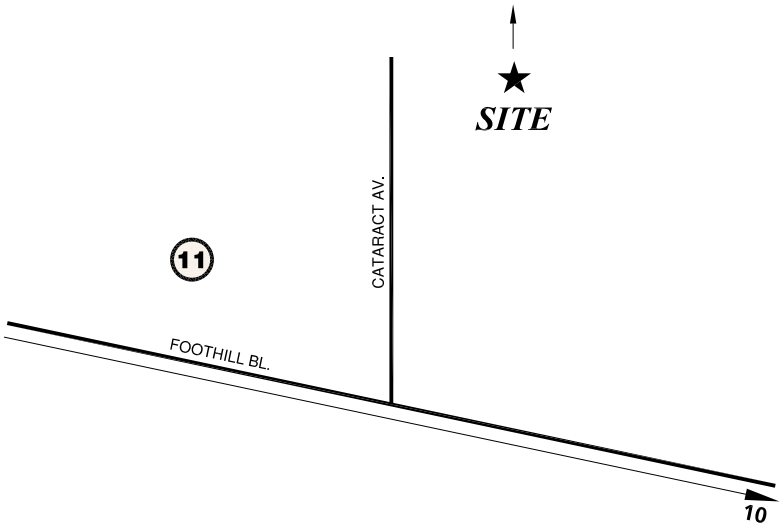
LEGEND:

10 = PERCENT TO/FROM PROJECT

(10) = TAZ 10 (DIAMOND RIDGE)

EXHIBIT 11

TAZ 11 (CATARACT GLENDORA) TRIP DISTRIBUTION



LEGEND:

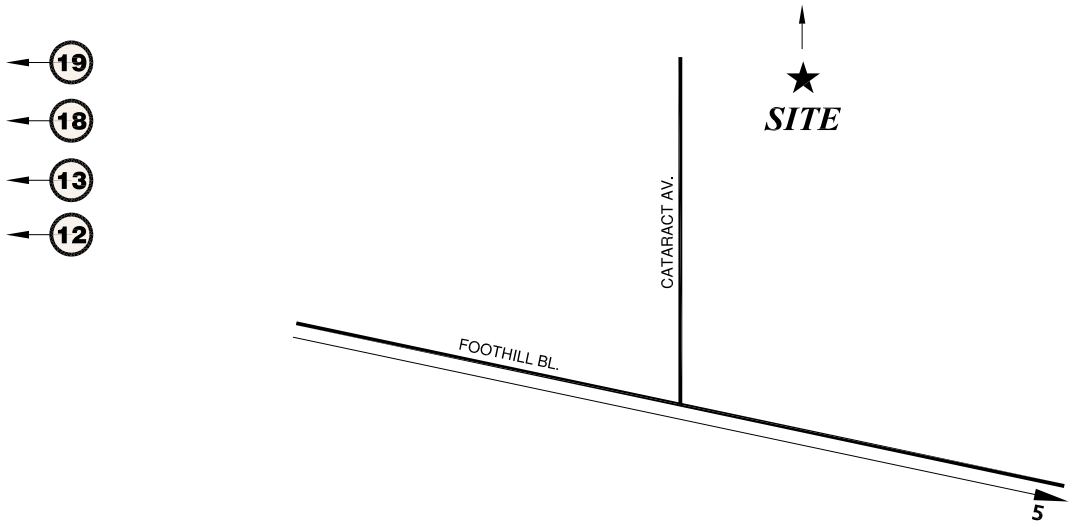
10 = PERCENT TO/FROM PROJECT

11 = TAZ 11 (CATARACT GLENDORA)

N

EXHIBIT 12

TAZ 12 (JPI SEVILLA), TAZ 13 (GLENDORA STATION), TAZ 18 (GRAND AVENUE), AND TAZ 19 (CITRUS VALLEY) TRIP DISTRIBUTION



LEGEND:

10 = PERCENT TO/FROM PROJECT

12 = JPI SEVILLA PROJECT

13 = GLENDORA STATION PROJECT

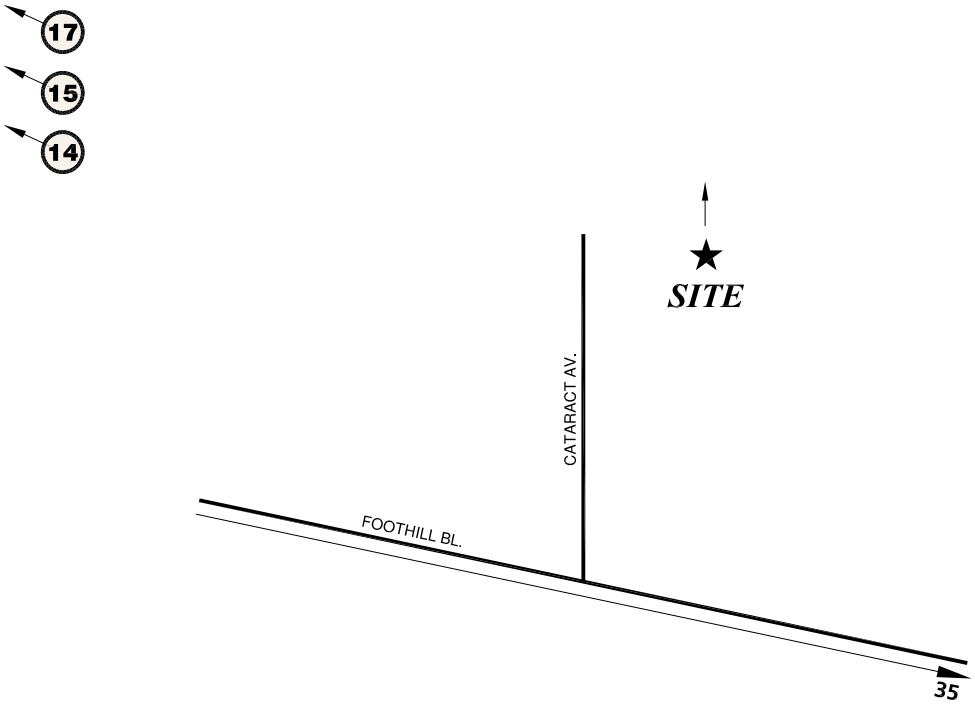
18 = GRAND AVENUE RETAIL

19 = CITRUS VALLEY OFFICE

N

EXHIBIT 13

TAZ 14 (TRACT 46680), TAZ 15 (TRACT 46916), AND TAZ 17 (NJD) TRIP DISTRIBUTION TRIP DISTRIBUTION



LEGEND:

10 = PERCENT TO/FROM PROJECT

14 = TRACT 46680

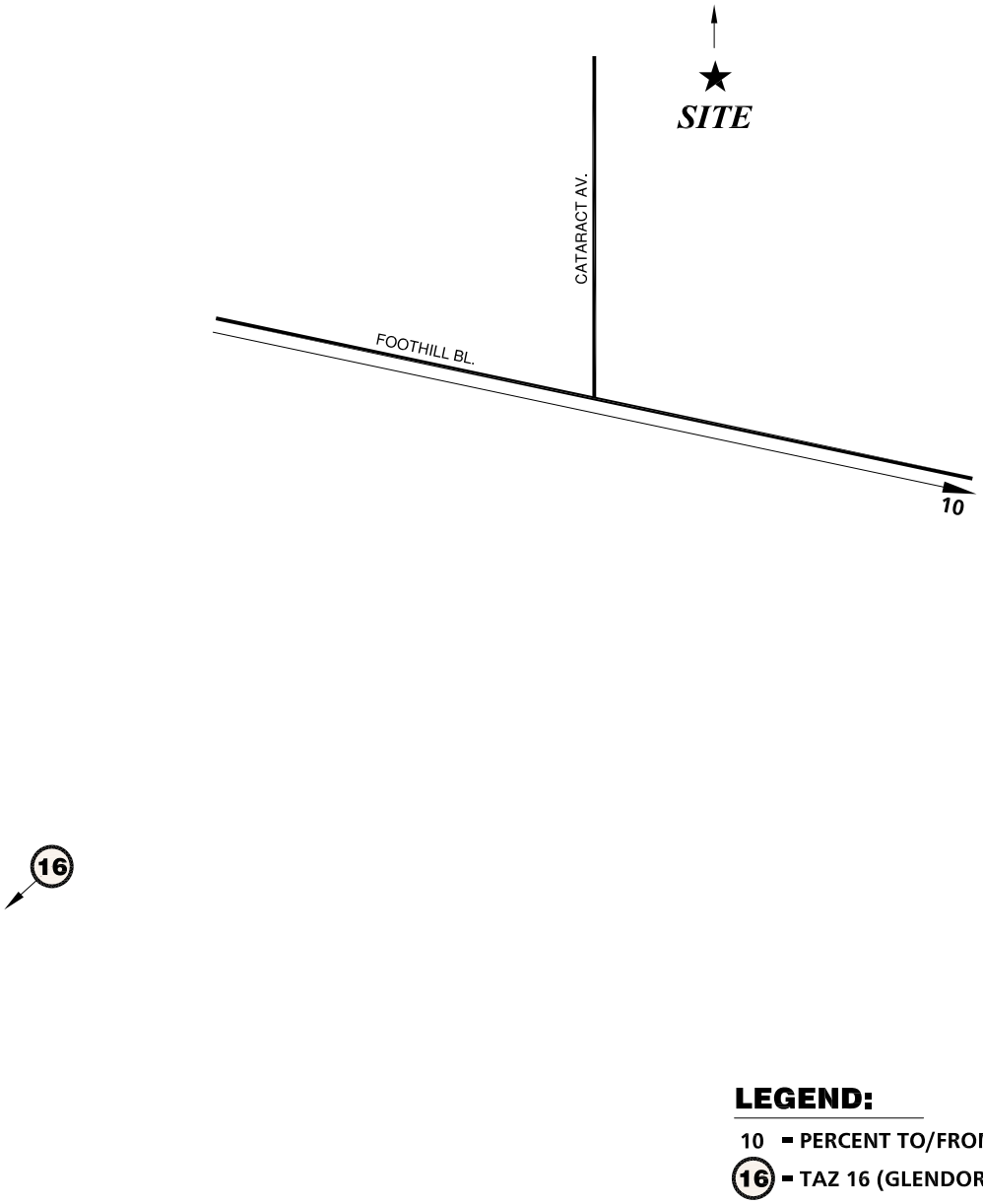
15 = TRACT 46916

17 = NJD

N

EXHIBIT 14

TAZ 16 (GLENDORA COMMONS) TRIP DISTRIBUTION



LEGEND:

10 = PERCENT TO/FROM PROJECT

16 = TAZ 16 (GLENDORA COMMONS)

N

APPENDIX E

EXISTING PLUS AMBIENT GROWTH PLUS PROJECT
HCM CALCULATION WORKSHEETS

BRASADATRAFFIC IMPACT ANALYSIS (JN 7358)
Existing + Ambient + Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Cataract/Foothill

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[17.3]

Street Name:	Cataract									Foothill Bl.								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	1	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	6	0	7	3	303	0	5	746	3								
Growth Adj:	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14								
Initial Bse:	0	0	0	7	0	8	3	345	0	6	850	3								
Added Vol:	0	0	0	14	0	20	7	0	0	0	0	5								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	0	0	0	21	0	28	10	345	0	6	850	8								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Volume:	0	0	0	21	0	28	10	345	0	6	850	8								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	21	0	28	10	345	0	6	850	8								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	1060	1232	429	859	xxxx	xxxxx	345	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	223	179	579	791	xxxx	xxxxx	1225	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	220	175	579	791	xxxx	xxxxx	1225	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.09	0.00	0.05	0.01	xxxx	xxxx	0.00	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.6	xxxx	xxxxx	8.0	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	341	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	17.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				17.3		xxxxxx				xxxxxx									
ApproachLOS:	*				C		*				*									

Note: Queue reported is the number of cars per lane.

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BRASADA TRAFFIC IMPACT ANALYSIS (JN 7358)
Existing + Ambient + Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Cataract/Foothill

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[22.2]

Street Name:	Cataract									Foothill Bl.								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	1	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0		5	0		3		11	1173		0		5	527		6		
Growth Adj:	1.14	1.14	1.14		1.14	1.14		1.14		1.14	1.14		1.14		1.14	1.14		1.14		
Initial Bse:	0	0	0		6	0		3		13	1337		0		6	601		7		
Added Vol:	0	0	0		9	0		14		23	0		0		0	0		16		
PasserByVol:	0	0	0		0	0		0		0	0		0		0	0		0		
Initial Fut:	0	0	0		15	0		17		36	1337		0		6	601		23		
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		
PHF Adj:	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		
PHF Volume:	0	0	0		15	0		17		36	1337		0		6	601		23		
Reduct Vol:	0	0	0		0	0		0		0	0		0		0	0		0		
FinalVolume:	0	0	0		15	0		17		36	1337		0		6	601		23		
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx		6.8	6.5		6.9		4.1	xxxx	xxxxx			4.1	xxxx	xxxxx			
FollowUpTim:	xxxxx	xxxx	xxxxx		3.5	4.0		3.3		2.2	xxxx	xxxxx			2.2	xxxx	xxxxx			
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx		1363	2032		312		624	xxxx	xxxxx			1337	xxxx	xxxxx			
Potent Cap.:	xxxx	xxxx	xxxxx		141	58		690		967	xxxx	xxxxx			522	xxxx	xxxxx			
Move Cap.:	xxxx	xxxx	xxxxx		136	55		690		967	xxxx	xxxxx			522	xxxx	xxxxx			
Volume/Cap:	xxxx	xxxx	xxxx		0.11	0.00		0.03		0.04	xxxx	xxxx			0.01	xxxx	xxxx			
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx		0.1	xxxx	xxxxx			0.0	xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx		8.9	xxxx	xxxxx			12.0	xxxx	xxxxx			
LOS by Move:	*	*	*		*	*		*		A	*	*			B	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	241		xxxxx		xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	0.5		xxxxx		xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	22.2		xxxxx		xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			
Shared LOS:	*	*	*		*	C		*		*	*	*			*	*	*			
ApproachDel:	xxxxxx					22.2				xxxxxx					xxxxxx					
ApproachLOS:	*					C				*					*					

Note: Queue reported is the number of cars per lane.

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APPENDIX F

2017 WITHOUT PROJECT CONDITIONS
HCM CALCULATION WORKSHEETS

BRASADA TRAFFIC IMPACT ANALYSIS (JN 7358)
Existing + Ambient + Other Developments
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Cataract/Foothill

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[17.8]

Street Name:	Cataract						Foothill Bl.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			1 0 1 1 0		
Volume Module:												
Base Vol:	0	0	0	6	0	7	3	303	0	5	746	3
Growth Adj:	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Initial Bse:	0	0	0	7	0	8	3	345	0	6	850	3
Added Vol:	0	0	0	2	0	1	1	48	0	0	46	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	9	0	9	4	393	0	6	896	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	9	0	9	4	393	0	6	896	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	9	0	9	4	393	0	6	896	3
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1115	1312	450	900	xxxx	xxxxx	393	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	205	160	562	763	xxxx	xxxxx	1176	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	203	158	562	763	xxxx	xxxxx	1176	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.04	0.00	0.02	0.01	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.7	xxxx	xxxxx	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	300	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	17.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			17.8			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

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BRASADA TRAFFIC IMPACT ANALYSIS (JN 7358)
Existing + Ambient + Other Developments
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Cataract/Foothill

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: D[28.3]

Street Name:	Cataract									Foothill Bl.								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	1	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0			5	0			3	11	1173			0	5	527			6
Growth Adj:	1.14	1.14	1.14			1.14	1.14			1.14	1.14	1.14			1.14	1.14	1.14			1.14
Initial Bse:	0	0	0			6	0			3	13	1337			0	6	601			7
Added Vol:	0	0	0			1	0			0	3	97			0	0	97			1
PasserByVol:	0	0	0			0	0			0	0	0			0	0	0			0
Initial Fut:	0	0	0			7	0			3	16	1434			0	6	698			8
User Adj:	1.00	1.00	1.00			1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00
PHF Adj:	1.00	1.00	1.00			1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00
PHF Volume:	0	0	0			7	0			3	16	1434			0	6	698			8
Reduct Vol:	0	0	0			0	0			0	0	0			0	0	0			0
FinalVolume:	0	0	0			7	0			3	16	1434			0	6	698			8
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx			6.8	6.5			6.9	4.1	xxxx	xxxxx			4.1	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	xxxxx			3.5	4.0			3.3	2.2	xxxx	xxxxx			2.2	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx			1461	2178			353	706	xxxx	xxxxx			1434	xxxx	xxxxx		
Potent Cap.:	xxxx	xxxx	xxxxx			122	47			649	902	xxxx	xxxxx			480	xxxx	xxxxx		
Move Cap.:	xxxx	xxxx	xxxxx			119	45			649	902	xxxx	xxxxx			480	xxxx	xxxxx		
Volume/Cap:	xxxx	xxxx	xxxx			0.06	0.00			0.01	0.02	xxxx	xxxx			0.01	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			0.1	xxxx	xxxxx			0.0	xxxx	xxxxx		
Control Del:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			9.1	xxxx	xxxxx			12.6	xxxx	xxxxx		
LOS by Move:	*	*	*			*	*	*			A	*	*			B	*	*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	165	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	0.2	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	28.3	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	D	*			*	*	*			*	*	*		
ApproachDel:	xxxxxx					28.3					xxxxxx					xxxxxx				
ApproachLOS:	*					D					*					*				

Note: Queue reported is the number of cars per lane.

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APPENDIX G

2017 WITH PROJECT CONDITIONS
HCM CALCULATION WORKSHEETS

BRASADA TRAFFIC IMPACT ANALYSIS (JN 7358)
Existing + Ambient + Project + Other Development Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #1 Cataract/Foothill

****

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[19.0]

****

Street Name:	Cataract						Foothill Bl.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			1 0 1 1 0		
Volume Module:												
Base Vol:	0	0	0	6	0	7	3	303	0	5	746	3
Growth Adj:	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Initial Bse:	0	0	0	7	0	8	3	345	0	6	850	3
Added Vol:	0	0	0	16	0	21	8	48	0	0	46	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	23	0	29	11	393	0	6	896	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	23	0	29	11	393	0	6	896	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	23	0	29	11	393	0	6	896	8
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1132	1328	452	905	xxxx	xxxxx	393	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	200	156	560	760	xxxx	xxxxx	1176	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	197	153	560	760	xxxx	xxxxx	1176	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.12	0.00	0.05	0.02	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.8	xxxx	xxxxx	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	309	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	19.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			19.0			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

****

Note: Queue reported is the number of cars per lane.

****

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BRASADA TRAFFIC IMPACT ANALYSIS (JN 7358)
Existing + Ambient + Project + Other Development Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Cataract/Foothill

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: D[29.9]

Street Name:	Cataract						Foothill Bl.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 1! 0 0			1 0 2 0 0			1 0 1 1 0		
Volume Module:												
Base Vol:	0	0	0	5	0	3	11	1173	0	5	527	6
Growth Adj:	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Initial Bse:	0	0	0	6	0	3	13	1337	0	6	601	7
Added Vol:	0	0	0	10	0	14	27	97	0	0	97	17
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	16	0	17	40	1434	0	6	698	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	16	0	17	40	1434	0	6	698	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	16	0	17	40	1434	0	6	698	24
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	7.0	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1517	2234	361	722	xxxx	xxxxx	1434	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	103	43	642	890	xxxx	xxxxx	480	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	99	41	642	890	xxxx	xxxxx	480	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.16	0.00	0.03	0.04	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx	12.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	178	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	29.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	D	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			29.9			xxxxxx			xxxxxx		
ApproachLOS:	*			D			*			*		

Note: Queue reported is the number of cars per lane.

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